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MONTHLY REPORT

OF

THE DEPARTMENT OF AGRICULTURE,

FOR

NOVEMBER AND DECEMBER, 1867.



WASHINGTON:  
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1867.



## MONTHLY REPORT.

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WASHINGTON, D. C., *December, 1867.*

SIR: I herewith report, for publication, the following matter, presenting an epitome of the facts and statements received, digested, and collated in the months of November and December, in the statistical division, including articles under captions as follows: Condition of crops for November, with tables; Extracts from correspondence; Wheat in Nebraska; Popular fallacies concerning wool; Greensand marl as a manure; Rinderpest; Immigration; Southern industry; Receipts of wheat; Pork packing; Trade with San Francisco; Los Angeles county, California; Composition and feeding value of straw; Hungarian agriculture; British cotton trade; Irish butter; Agricultural returns of Great Britain; Movement of live stock; Dog tax in England and Scotland; California items; Facts from various sources; Meteorology.

Respectfully,

J. R. DODGE.

Hon. HORACE CAPRON,  
*Commissioner of Agriculture.*

## CONDITION OF FARM CROPS.

Estimates of most of the principal farm crops have heretofore been given. The severe drought of the central portions of the west modified somewhat the expectations of early summer, while the fine fall weather of the south tended to enlarge the prospective returns of cotton planters.

*Corn.*—The following are estimates from department and all other accessible data of the corn crop of 1867 in the several States. It will be seen that the figures are actually less than those in 1860, notwithstanding the increase of population in many of the States, including the great corn-growing States of Illinois and Ohio. The total, 775,820,000, is about 53,000,000 bushels less than the total census return of 1860, which was 838,792,740 bushels. Considering the increase of population this is scarcely four-fifths of the product of that year:

	Bushels.
Maine.....	1, 575, 000
New Hampshire.....	1, 413, 000
Vermont.....	1, 520, 000
Massachusetts.....	2, 363, 000
Rhode Island.....	340, 000
Connecticut.....	2, 242, 000
New York.....	20, 500, 000
New Jersey.....	9, 730, 000
Pennsylvania.....	30, 457, 000
Delaware.....	3, 639, 000
Maryland.....	11, 650, 000
Virginia.....	18, 490, 000
North Carolina.....	17, 974, 000
South Carolina.....	7, 834, 000
Georgia.....	29, 037, 000
Florida.....	2, 500, 000
Alabama.....	35, 500, 000
Mississippi.....	19, 657, 000
Louisiana.....	9, 535, 000
Texas.....	20, 716, 000
Arkansas.....	21, 243, 000
Tennessee.....	50, 250, 000
Kentucky.....	46, 550, 000
Missouri.....	50, 437, 000
Illinois.....	109, 091, 000
Indiana.....	80, 757, 000
Ohio.....	64, 000, 000
Michigan.....	15, 118, 000
Wisconsin.....	9, 885, 000
Iowa.....	53, 333, 000
Kansas.....	8, 159, 000
Minnesota.....	4, 500, 000
Nebraska.....	2, 325, 000
West Virginia.....	6, 500, 000
Pacific States and Territories.....	7, 000, 000
Total.....	775, 820, 000

*Cotton.*—The returns relative to cotton indicate fully twenty per cent. aggregate increase over the crop of last year. The actual crop of 1866, as sold and shipped, (making due allowance for receipts of the previous crop and amount not

sent forward on the 1st of September, 1867,) was very nearly 1,900,000 bales. while the estimate of this department, in October, 1866, was 1,835,000 bales. That crop was one of the most unfortunate ever grown—reduced by cold, wet weather in spring, drought in summer, insects, floods, frosts, and other casualties; otherwise it would have reached two and a half millions of bales. In South Carolina and Georgia, particularly, the breadth of cotton was much enlarged last spring, while in Mississippi it was slightly diminished. As a whole, the acreage was somewhat increased. While the casualties of this season have been fewer, and successful growth more general, many drawbacks have occurred in various localities, as shown in “extracts from correspondence” elsewhere; but the season for picking has proved exceedingly favorable, the weather having been fine, and killing frosts long deferred.

The total estimate, made in view of all the department data, as well as outside information, is placed at 2,340,000 bales. It will be seen that Texas has done less than should have been expected, and many may regard 200,000 bales as still too high, both for her Red river and Gulf coast outlets. The following are separate estimates by States:

	Bales.
North Carolina .....	150, 000
South Carolina .....	225, 000
Georgia .....	390, 000
Florida .....	55, 000
Alabama .....	375, 000
Mississippi .....	305, 000
Louisiana .....	155, 000
Texas .....	200, 000
Arkansas .....	230, 000
Tennessee .....	175, 000
Other States .....	80, 000
Total .....	<u>2, 340, 000</u>

The total number of bales, as returned by the census of 1860, was 5,386,397

Table showing the condition of the crops, &amp;c., on the first day of November, 1867.

STATES.	CORN.		SORGHUM.		POTATOES.		TOBACCO.		PEAS.	
	Average amount of crop compared with 1866.	Quality of the same.	Average amount of crop compared with 1866.	Quality of the same.	Average amount of crop compared with 1866.	Quality of the same.	Average amount of crop compared with 1866.	Quality of the same.	Average amount of garden crop compared with 1866.	Average amount of field crop compared with 1866.
Maine .....	9.7	10	.....	.....	5.7	7.4	.....	.....	9.4	8.8
New Hampshire.....	10.7	11.3	.....	.....	7.7	9	.....	.....	9.7	9.6
Vermont .....	10.2	12	.....	.....	8.1	9.2	10	10	9.7	9.4
Massachusetts.....	10	10.4	9	10	7.8	8.7	7	10.3	10.2	10.2
Rhode Island .....	8.3	10	.....	.....	7.3	8.7	8	8	10	.....
Connecticut .....	10.1	10.5	9.7	10.7	6.5	8.7	8.5	10.2	6.5	10
New York .....	10.2	10.8	9.8	11.2	8	9.7	8.9	10.9	10.2	10.3
New Jersey.....	10.2	10.3	8.1	9.6	6	7.7	8	8	10	9.7
Pennsylvania.....	8.5	10.1	7.3	9.1	7.5	9.5	9.5	9.5	9.8	9.6
Delaware.....	8.5	9.5	7	10	9.5	7	.....	.....	14	.....
Maryland.....	8	9.4	8.4	10.2	8.6	9.8	7.5	9	10.5	9.8
Virginia .....	8	9.3	7	8.8	9.3	10.1	10	9	9.5	8.9
North Carolina .....	8.3	9.4	10	8.1	10.1	9.9	10.2	9.8	8.9	7.8
South Carolina.....	13	11.2	6.9	9.2	10.7	9	8.5	10	9.8	10.7
Georgia .....	18.5	16.6	9.1	10.4	12	10.5	10.8	11.5	13.5	13.9
Florida .....	13	10.2	.....	.....	10	8.7	3	2	8.5	8.5
Alabama .....	19.5	13.7	8.4	11.6	11.4	10.9	9.2	11	11.4	11.1
Mississippi.....	16.5	11.4	6.7	10.7	10.7	10	10.7	10.7	9.8	10.5
Louisiana .....	13.8	9	12	10	11.7	8.8	8	12	10.6	11
Texas .....	10.7	10.6	9.5	10.1	12.1	10.8	8.7	9.8	9.8	10.1
Arkansas .....	19.2	12.5	15.3	12.3	12.3	10.2	12.2	9.7	15.2	13.6
Tennessee .....	12	10.9	8.5	10.1	8.4	9.4	8.9	9.9	11.2	10.8
West Virginia.....	8	10.3	8.4	9.9	9.5	10.7	8.8	10.2	10.2	10.2
Kentucky.....	7.1	9.1	7.4	9.3	7.2	8.9	6.6	9.3	8.8	9.3
Missouri.....	11.2	11.2	9.8	10	10.5	11	9	10.8	10	10
Illinois .....	7	11.4	4.8	10.3	7.2	10.7	9	9.8	9.7	9.7
Indiana.....	7.5	11	5	9.7	8.2	11.2	9	10.2	9.8	9.3
Ohio .....	6.5	10.6	5.6	9.8	8.2	12.6	4.2	9	9.4	9.6
Michigan .....	10	11.9	8.3	9.9	9.9	11	9.4	9.9	10.2	10.5
Wisconsin .....	10.5	13.4	7	11.4	10.4	11.9	7.8	10.7	10.5	10.3
Minnesota.....	11.5	12.5	11.3	11.3	9.7	11	9.7	9.5	10.6	10.4
Iowa .....	10.2	12.4	6.9	11.1	12.2	10.8	9.9	10.6	10.2	10.1
Kansas .....	12.5	11.3	12	10.8	12.9	11	10.6	10	14.3	10.5
Nebraska .....	11.1	12	9	10	9	10	8.3	10	10.3	9.2



Table showing the condition of the crops, &amp;c., on the first day of November, 1867.

STATES.	HAY.		BEANS.	BUCK- WHEAT	FLAX.	COT- TON.	SUGAR- CANE. (not sorghum.	GRAPES	APPLES.	PEARS.
	Average amount of crop com- pared with 1866.	Quality of the same.	Average amount of crop com- pared with 1866.	Average amount of crop com- pared with 1866.	Average amount of crop com- pared with 1866.	Average indicated crop com- pared with 1866.	Average indicated crop com- pared with 1866.	Quantity compared with an average crop.	Quantity compared with an average crop.	Quantity compared with an average crop.
Maine.....	13.2	9.5	9.5	9.7	9.8	.....	.....	7.8	5.6	8.9
New Hampshire..	12	10	8.7	10.8	10	.....	.....	8.7	8.1	11
Vermont.....	11.6	10.6	10.2	10	9.7	.....	.....	12.3	9.7	10.7
Massachusetts....	13.9	9.4	8.6	8.2	.....	.....	.....	8.5	7.7	9.6
Rhode Island ....	12.7	8.3	10	10	.....	.....	.....	6.5	3.3	8.3
Connecticut.....	13.4	8.5	9.5	6.2	.....	.....	.....	10	5.7	10.2
New York.....	11.2	10.4	10.2	10.1	9.5	.....	.....	9.7	8.1	9.4
New Jersey.....	12.2	9.2	9.7	9	8.7	.....	.....	8.2	5.4	9.2
Pennsylvania ....	12.3	10.5	9.6	9.1	9.2	.....	.....	9	5.2	8.5
Delaware.....	11.5	10	10	12	10	.....	.....	9	7.5	10
Maryland.....	11.8	9.8	10	10	9	.....	.....	6.8	6.9	9.3
Virginia.....	11	10.3	9.8	8.7	8.2	8.3	.....	10.1	11.2	12.1
North Carolina...	11	10.1	7.3	7.8	9.2	11	.....	9.5	9.3	9.2
South Carolina...	11	9.7	10	10	10	13.3	.....	11.4	8.6	6.7
Georgia.....	12.8	10.6	11.9	10	10	14.4	11.3	9.5	7.2	7.7
Florida.....	8	7	7	.....	.....	7.8	10.8	10	.....	8
Alabama.....	11.5	10.2	11.3	10	10	13.6	10	8.7	7.2	6.2
Mississippi.....	13.6	12.6	10.7	11	.....	10.9	10	6	4.4	3.3
Louisiana.....	40	11.2	9.5	.....	.....	9.1	15	6.5	6.5	5
Texas.....	11	10.5	9.8	.....	.....	9.7	10.6	10.3	7.7	8
Arkansas.....	12.6	11.6	12.8	9	10	11	.....	10	9.8	8.9
Tennessee.....	10.8	10.2	10.8	8.8	10.2	11.1	.....	8.9	3.6	4.1
West Virginia....	10.8	11	9.9	8.6	9.6	.....	.....	5.7	12.7	11.7
Kentucky.....	10.2	10.8	8.5	7.8	8.9	8.5	.....	8.6	9.2	9.3
Missouri.....	10.4	11.2	9.7	10.2	10.1	10.4	10	10.5	12.1	10.6
Illinois.....	11.4	12.2	9.3	9.1	9.6	8.6	.....	11.3	8.6	10.1
Indiana.....	11.1	12.1	9.4	9	10.4	.....	.....	10.4	10.4	10.9
Ohio.....	11.3	12.5	5.8	6	9	.....	.....	10	7.2	8.7
Michigan.....	11.3	11.2	10	9.9	9.8	.....	.....	11.5	10.7	10.3
Wisconsin.....	11.9	12.4	10.3	9.5	8.4	.....	.....	12.2	14.7	11.7
Minnesota.....	13.1	12	11.1	9.2	9.6	.....	.....	12.7	11.7	.....
Iowa.....	11.9	11.4	10.4	11.1	11.6	.....	.....	12.6	12.6	11.1
Kansas.....	13.2	11.6	11	15.3	10	9.8	10	10.9	13.2	11.5
Nebraska.....	11.8	10.7	9	10.5	10	.....	.....	12.3	13	11.7

## EXTRACTS FROM CORRESPONDENCE.

## COTTON.

*Duplin county, North Carolina.*—To sum up the results of this year's operations, we have two-thirds enough corn for next year's consumption; one-half to two-thirds of our cotton crop goes to pay for fertilizers, and the balance is due our laborers. Cause—heavy rains, indifferent tillage, and too great eagerness to make money, the high price of cotton last spring having induced our planters to limit the breadth of land in corn and peas to barely sufficient under favorable circumstances to furnish a supply for home consumption, and to increase the acreage of cotton 100 to 150 per cent. At present prices (eleven to fourteen cents per pound, net) we cannot grow cotton here, and two-thirds of the farmers of this county cannot pay expenses this year.

*Wake county, North Carolina.*—Cotton does not pay expenses here this year. Planters are arranging for next year to plant only two-thirds of a crop, and pay only two-thirds of present wages to laborers.

*Bertie county, North Carolina.*—The decrease in our cotton crop is one-half as compared with last year, though the staple is longer.

*Beaufort county, North Carolina.*—The yield of cotton worse than was expected, so many bolls were shed before maturity.

*Jones county, North Carolina.*—It is the opinion of intelligent farmers in this and adjoining counties that the yield of cotton will be above that of last year's crop in quantity, but with less yield per acre, as there was larger acreage than last year.

*Abbeville county, South Carolina.*—Cotton is good, and will yield more than an average crop to the acres planted, but owing to the diminished acreage it will not reach the average crop before the war. The usual average of cotton in the seed to the acre is from 350 to 410 pounds. This year I put it at 500 pounds, or 130 pounds of lint to the acre. Since the decline in price the tax is felt to be oppressive, and if not removed or modified will greatly diminish the production another year.

*Carroll county, Georgia.*—The cotton crop has been seriously injured by the rust, but the deficiency will not be large, so favorable has been the fall for gathering. The crop was gathered unusually early. The caterpillars did little harm.

*Spaulding county, Georgia.*—Our yield of cotton per acre will, in my opinion, exceed that of any season since 1847 and 1848, or even the crop of 1839. The weather has been favorable for gathering the staple as fast as it opened, consequently the quality is good; but many planters injure the lint in ginning too rapidly with gins that are filed too sharp.

*Newton county, Georgia.*—The season has been very favorable for gathering cotton, and we hope to make an average crop in this county. The tax imposed by government upon this staple, together with the uncertainty of labor, will doubtless discourage many from continuing its culture.

*Bibb county, Georgia.*—The cotton crop, though large, will not be remunerative to the planter, as the heavy tax and excessive prices of bacon, corn, and mules will more than absorb the crop.

*Greene county, Georgia.*—We have been blessed by a kind Providence this year. I will make the largest crop of corn and cotton made in ten years. Some of my cotton is over six feet high, and so loaded with bolls that it is so tangled and laying on the ground that it is almost impossible to pass through it.

*Giles county, Tennessee.*—We have had an unusually fine autumn for gathering cotton, which in this section is very fine. Relieve us of the onerous cotton tax, and let our farm operations quiet down, and we will go on prospering, and soon repair the ravages of the late devastating civil war. There is a general inquiry for labor-saving machines and implements, better stock, seeds, &c.

*Henry county, Tennessee.*—Fall has been favorable for farm work, and although labor is scarce and high (in proportion to the price of cotton) the picking of cotton is well advanced. A large portion of the crop of this county will be manufactured in the county, there being four spinning factories located within our county limits.

*Tippah county, Mississippi.*—Cotton turns out fifty per cent. better in this county than anticipated in my last report, the worm not doing as much injury as expected, and the season having been very favorable for gathering the crop.

*Union county, Georgia.*—Cotton is opening slowly, but with fair weather all the grown bolls will yet open.

*Mississippi county, Arkansas.*—The very favorable fall season for cotton, maturing almost every boll, has given us an increased crop over last year, both in quantity and quality, more than compensating for the injury in early spring from cold and wet and the cut-worm. Yet, under the present state of affairs, the planter who has produced the most cotton has accumulated the greatest debt, to be liquidated by future crops, or cancelled under the bankruptcy act. Cotton, of the grade we produce, will yield us, after payment of tax, commissions, and freight, about  $11\frac{1}{2}$  cents per pound, yet it cannot be grown, at present rates of supplies and labor, for less than 18 cents per pound. Cotton growing in the Mississippi valley is a financial failure, and not a single honest planter of this valley will disagree with me in this view.

*Desha county, Arkansas.*—I estimate the cotton crop of this county at about thirty per cent. less than last year. The condition of the crop up to October 1 was not good, but the favorable weather since has brought out the cotton astonishingly, and all the bolls not injured by the worm will mature.

*Bossier parish, Louisiana.*—The cotton crop in this part of the State, and I may say throughout the State, will fall far short of earlier estimates. The crop is now nearly gathered, and to show you the condition of the cotton crop, I may say that I have in cultivation 200 acres, and forty bales will be the outside of my yield. I should have had a bale to the acre—our calculation ordinarily.

*Union county, Arkansas.*—From the 1st to the 15th of July the cotton crop looked promising, when the worms made their appearance, always in the centre of the field, and generally on the very best cotton. By the 15th of August all the leaves were stripped from the stalks.

*Prairie county, Arkansas.*—Cotton crop diminished on account of the long wet spell in the spring and the succeeding drought. The staple, however, is longer and better than before known.

*Fayette county, Texas.*—I think cotton will average one-fourth of a bale (500 pounds bale) to the acre in this county. I have travelled considerably through the county, and find the crops various. While a few acres will yield a bale per acre, some acres are not worth harvesting.

*Texas county, Texas.*—Cotton planting proves a losing business here to all engaged in it, and will be a secondary consideration hereafter. Any other crop is more profitable than cotton with the present prices and revenue tax.

*Lavacca county, Texas.*—The failure of the cotton crop in this county is more complete than I have ever known before. Several farms of 100 acres and upwards in cotton have only made from one and a half to five bales altogether, while a few farms of from ten to sixty acres have made one-quarter bale to the acre. The prospect for next year is not encouraging, for the grasshoppers are already by the million depositing their eggs in the western part of the county, which, if not destroyed by storm or severe winter, will hatch out in the spring, and do a great deal of damage.

*Henderson county, Texas.*—The worm injured the cotton crop about 20 per cent. The lint will prove to be inferior on account of the immaturity of the bolls that were attacked by the worms; it is fine, but short, with little oil in it, and not strong. My estimate of the present crop of cotton is 2,000,000 bales.



of 500 pounds each, at the very utmost. Our cotton is worth at home, at present prices, about eight cents per pound. We cannot make it for less than twelve cents per pound. I have made two good crops for the land planted and the force employed, (both on a small scale,) and they bring me in debt. This is also the experience of others. Hence we quit, rent, or let the land lay idle.

*Cherokee county, Texas.*—On account of the tax on cotton, the acreage was less, and that grown was greatly damaged by the worms, particularly on the bottom lands, and even on the uplands fields of 100 acres will not make more than ten bales of 500 pounds each.

*Colorado county, Texas.*—Cotton, in this county, is almost an entire failure, from the ravages of the army worm. This has been the case in all the counties within 100 miles of the coast.

*Leon county, Florida.*—Cotton has turned out better in this county than anticipated. Planters will not get through picking before Christmas. Our crop will be about twenty per cent. above that of last year.

*Red River county, Texas.*—We have had almost a failure in the crop of cotton on account of the cotton caterpillar, and wet weather. We shall not have more than half a crop.

*Hunt county, Texas.*—Last year there were about 100 bales of cotton made in this county; this year there will be at least 600 bales. The increase is from acreage. The yield per acre will be about 266 pounds ginned cotton. Last year it was about 400 pounds. The ravage of the worm is the cause of the decline in yield per acre.

*Austin county, Texas.*—The havoc committed by the cotton worm or caterpillar has been greater this year than ever before, the worms in most places returning four times to the same fields, not allowing anything to grow anew. More than sixty acres in view cannot be picked at all. A good, medium crop would have brought us 2,500 bales of 500 pounds, but now it is doubtful whether we shall have 500 bales.

#### THE EGYPTIAN COTTON.

*Bossier parish, Louisiana.*—Last spring I received a small package of Egyptian cotton-seed from the department. The seed was planted with great care, but from some cause comparatively few came up. The stalk is very large and high, but does not branch near the ground—say two to three feet above, as a general thing. The middle and top branches are very heavily balled. Some of the stalks are as much as ten to twelve feet high, and very large at the ground. The staple is very fine and long. I am of opinion that it will do well when acclimated, and I shall give it a fair trial next year.

*Baton Rouge, Louisiana.*—The Egyptian cotton seed received from the Department of Agriculture last spring, was planted upon two kinds of soil, upland and bottom, and fairly cultivated, and a tolerably good description of plant, but inferior in the yield to the "Mexican green," and "brown Mexican," that we cultivated in the general crop. We can see no inducement to replant the seed of the Egyptian cotton.

#### THE BOUGHTON OR TAPPAHANNOCK WHEAT.

*Sparta, Wisconsin.*—The Boughton or Tappahannock wheat has been successfully tried in this section for several years past. About five years ago I received from the department a quart package of the seed which was placed in the hands of one of our best farmers, Mr. R. McMahon, whose farm was a mixture of clay and loam. The seed was sowed about the fifteenth of September, and it grew well and matured twenty days ahead of other varieties, producing largely. The product was sowed the second year, which likewise increased remarkably. The third year produced enough to count by acres and the yield was about thirty-two bushels per acre, with a large, stout stalk, well headed. The crop was harvested on the 4th of July, escaping all vermin infesting

other varieties of wheat in this region. Since that period Mr. McMahon has been raising this grain and selling several hundred bushels yearly to the farmers of this section at an advanced price. The grain has been ground for flour and found to produce exceedingly well. The average product 'per acre has been thirty-one bushels, weighing sixty-two pounds per bushel. It is now the popular grain of this portion of the State, where the mercury falls to 28° below zero in winter.

*Lancaster county, Pennsylvania.*—On the 18th of September, 1866, I seeded one quart of early Boughton wheat received from the Department of Agriculture. It was fully ripened twelve days before our earliest variety, (early red chaff,) and yielded seventy-nine pounds, not being injured in the least by the midge. A neighbor of mine seeded one quart of the same variety and harvested seventy-seven and three-quarter quarts of good clean wheat. If it does anything like as well next season it will be the wheat for this section. It stands the winter well.

#### EARLY SOWING OF WHEAT.

*Randolph county, North Carolina.*—I think the farmers of this section are too backward in seeding down their fall crops. I sowed eight acres of fallow land with winter wheat in September, and by the last of October it pretty nearly covered the ground. When sowed early it is better able to withstand a severe winter, the blades being a covering and protection for the roots.

#### THE HOP CROP.

*Sauk county, Wisconsin.*—The hop crop of this county is enormous, being 100 per cent. ahead of last year. The crop this year will bring into the county \$3,000,000.

#### TOBACCO GROWN WITHOUT SUCKERS.

A. Packham, esq., of Prestonville, Carroll county, Kentucky, furnishes the following directions to tobacco-growers who would save the labor and trouble of suckering their plants several times during the season:

"At the time when suckering is about necessary, provide yourself with a small tin oil-can, the tinner making the spout of it with a sharp point, similar in shape to the blade of a penknife; then filling your can with a solution of crude potash, go through the motion of suckering by breaking off such as you see, and then with the point of your can make an incision down obliquely into the stalk, just at the spot between the stem and the stalk, where the sucker would grow, dropping into the incision so made one drop of the potash. This is the whole secret. It will not injure the valuable leaf, check its growth, or hurt the plant, but it will kill the germ of the future sucker. With practice a person can doctor a plant as above stated with as much celerity as one can the suckering, and will thus save the trouble of going over and suckering millions of plants every year."

#### LESPEDEZA STRIATA, OR BUSH CLOVER.

B. D. Lamsden, of Eatonton, Georgia, in writing to the department in relation to the *Lespedeza striata*, or bush clover, now attracting considerable attention in middle Georgia, says:

"It is an annual, and has leaves in threes, like clover. The flowers are like those of the pea and bean, and the seeds somewhat resemble a bean, but are encased in separate shields. Its history or origin no one knows. If it is the *Lespedeza striata* it came from Florida, as the plant which bears that name was discovered there and called after one of its governors. It was noticed in this county (Putnam) five or six years ago, and has rapidly spread over the whole county; every field and lane having more or less in the fence corners. Last year I saved some of it for hay, which was readily eaten by all kinds of stock.

Sheep seem to delight in grazing upon it. I think it a great blessing for our old and worn-out fields. It grows in the shade and on any land where there is the least soil. It is rapidly destroying the broom sedge of our old fields, and is killing out that hated Bermuda grass, which is so troublesome on some of our plantations. It is not hard to destroy, as, well pulled up, it dies. It is a great renovator of the soil—a fact which has been demonstrated more than once to my certain knowledge.

"Our oldest citizens say it first appeared in the summer or spring after a severe dry storm which occurred five or six years ago. One intelligent gentleman says that it was introduced in an adjoining county (Green) by a Scotchman, who received the seed from Scotland. Whatever its name or origin makes little difference to the horses, mules, cows, and sheep."

#### SHEEP HUSBANDRY IN GEORGIA.

The same correspondent, in speaking of sheep-raising in Georgia, expresses the opinion that "when the *Lespedeza striata* shall cover our worn-out lands and pine thickets, and rooted out our broom sedge, which it is fast doing, and legislative action be taken in regard to the sheep's worst enemy, dogs, middle Georgia will become a wool-growing section. I had thirty head of sheep last winter—common stock of the country. I did not give them one cent's worth of food, and left them to care for themselves, salting them occasionally. Early in the spring they commenced lambing, and I raised thirteen lambs, and sold \$12 50 worth of wool. The lambs were considered the best in our section, and the sheep were in fine condition. I mention these facts to show that with proper attention sheep husbandry can be made profitable in middle Georgia."

#### SILK-WORMS.

Mr. H. C. Hermann, of Lenni, Delaware county, Pennsylvania, writes as follows in reference to the ailanthus silk crop :

"I made a splendid crop in the spring, but lost in the fall what I had gained in the spring, saving only 150 cocoons out of 200,000 worms. A very early frost, in September, killed the leaves and worms. When I first got the ailanthus worms I had no experience with the native silk-worms, but now I think them superior to any foreign silk-producing insect, both for the quantity of silk they produce, and the durability and strength of the material. I shall turn my attention to the native silk-worm next year, and report my success. I find as many wild cocoons as I want."

#### GRASSHOPPERS AND LOCUSTS.

*Lampasas county, Texas.*—Grasshoppers made their appearance here in immense numbers about the first of October, and completely destroyed the fall and winter gardens, and injured the stock range materially. They continued with us until the 20th, when they moved on their journey in a southeasterly direction. Fortunately little or no wheat had been sown. Farmers are now sowing small grain, but the acreage will probably fall short of last year, many being deterred from sowing by apprehension of the reappearance of the destroyer in the spring.

*Dallas county, Texas.*—The grasshoppers made their appearance here on the 17th of October, the air being filled with them. They appeared to be coming from the west, and travelling east. They have literally eaten every green thing, and in places where they got to the wheat that was being sown they devoured the grain. About two-thirds of the grasshoppers have disappeared, and I think all will leave in a few days.

*Burleson county, Texas.*—We have the locusts or grasshoppers with us, and they now cover the ground and are depositing their eggs.

*Bell county, Texas.*—We have had grasshoppers in considerable numbers



since the 15th of October, but too late to do any harm except to gardens, which they have entirely destroyed.

*Woodson county, Kansas.*—The "Mormon locusts" made their appearance in this county on the 25th of September, and there was not sufficient cold weather to stop their ravages upon the crops until the 29th of October, when the thermometer fell to 24° above zero. The consequence is they have destroyed all the wheat sown prior to their arrival. Wheat is now being sown, but it is late, and I fear there will not be a good crop next year.

*Nodaway county, Missouri.*—The grasshoppers made a raid upon us this fall, but too late to do much injury. We look for their appearance in the spring, when the eggs deposited will hatch.

*Dakota county, Nebraska.*—The grasshoppers have left us, but their eggs have been deposited to be hatched out in the spring.

*Hall county, Nebraska.*—Grasshoppers have been very thick again this season, but have done little damage. They have deposited few eggs compared with the preceding year.

*Page county, Iowa.*—We have had a most bountiful season, fruit and crops of all kinds producing remarkably; but we have been visited this fall by the grasshoppers, which have devastated gardens to considerable extent, and even eaten the fruit from the trees. They were particularly fond of peaches, in many instances eating the fruit entire, leaving the pit on the tree. Nearly all the cabbage in the county has been devoured by them, and the fall wheat entirely eaten up, my own being the only piece left in this section. The earth is filled with their eggs, and we are expecting the grand army of grasshoppers in the spring, of which these were probably the advance guard.

*Fayette county, Texas.*—Grasshoppers appeared in this neighborhood on the 3d instant in great numbers. As yet I have discovered no devastation by them, but believe we shall yet suffer from them, if not till spring.

*Coryell county, Texas.*—The grasshoppers made their appearance in this county on the 12th of October, coming in vast quantities from the north. They have been with us a month, and done much injury. All the fall gardens were destroyed, and though wheat sowing time is past little has been sown, as the grasshoppers eat the grain before it can be covered.

*Lampasas county, Texas.*—Since last report grasshoppers have come upon us, though not very numerous, but sufficient to deter farmers from putting in wheat and other small grains, and the probability is that little fall wheat will be sown in this county this season.

*Fannin county, Texas.*—The grasshoppers made their appearance about two weeks ago, but have done little or no injury yet. There is a general disposition to withhold seeding until the grasshoppers entirely disappear.

*Red River county, Texas.*—We have now in this county, for the first time within my recollection, a visitation of grasshoppers, which are devouring everything they can make food of, and I fear they will destroy all the wheat put into the ground. Sowing will be suspended until they disappear.

*Austin county, Texas.*—Locusts and grasshoppers, heretofore unknown in this locality, have appeared in countless numbers, and we anticipate their return next year.

*Great Salt Lake City, Utah.*—A correspondent, writing of the extreme mildness of the season, says: "I have only to narrate that in a field that was being planted in the northeast portion of this city last Monday numbers of young grasshoppers the size of house flies were turned up by the plough, all alive and green, and quite recently hatched."

#### THE POTATO BUG.

*Brown county, Wisconsin.*—The potato bug spread very rapidly this year. Whole fields were destroyed by them. The insect attacked white, delicate

potatoes first, those having red color on them last. The Prince Albert vines were totally devoured before the Garnet Chili vines were touched by them, though growing side by side.

#### EARLY LAMBS.

The following from Queens county, New York, indicates the growing tendency towards the production of mutton rather than wool: "Wool very low, and number of sheep decreasing, and were it not for the high price that lambs fetch in New York market early in the spring, sheep raising would be abandoned in this section."

#### WHEAT IN NEBRASKA.

The editor of the Omaha Herald, in printing the gist of the article in the October report upon wheat culture, refers to a conversation with a prominent farmer, who expressed a belief that Nebraska might expect exemption from the prevalent deterioration in yield of wheat lands "by rotation of crops and keeping out the weeds, and by ploughing a little deeper each year."

This is begging the whole question. These are among the means proposed for the increase of production and prosperity of western farmers, which are now ignored by the great majority of them in all these States, with little probability that Nebraska will prove an exceptional case. The employment of the same means would produce universal improvement; but improvement was never yet made by a person professing to have already attained perfection. It is useless to recommend variety in crops and the ameliorations incident to stock growing to farmers who believe that a soil will never wear out if annually scratched to the depth of five inches and invariably sown with wheat, which is inevitably swamped with weeds before the wheat is half grown. Instead of tares growing with the wheat until harvest, it is often the case that the wheat makes a futile endeavor to lift up its head among the tares.

The Herald states as a remarkable fact, that "these Nebraska wheat-growing soils are so deep that it has been demonstrated in his own experience and that of others that soil brought from fifty feet below the surface in digging wells, properly prepared and sown to wheat, will raise almost as large a crop of wheat and of equal quality with that which is next the sod."

It matters little how rich the material that may lie fifty feet below the surface to farmers who will not go five inches in that direction. Shallow cultivation, and little of that, is the rule in new countries, generally followed till discouragement at the results attained leads to changes of proprietorship and systematic farming. Statistics of Australia show the same causes and the same effects now operating. Wheat averages have there been reduced to twelve bushels per acre, under a course of shallow ploughing and weed growing, with seeding annually to wheat. If the wheat growers of Nebraska are discarding the slovenly example of the west generally, preparing the seed bed thoroughly, selecting seed with care, drilling at sufficient width and with such regularity as to admit of cultivating and destroying weeds, adopting a judicious system of rotation, and keeping stock to utilize hay and straw of the farm and return to the soil the elements withdrawn from it, then they may escape the losses of wheat deterioration, but not otherwise. These are simple truths, as every good farmer knows, but, with very few exceptions, they are not acted upon. Among those exceptions, even in the poorer soils of the east, are cases of twenty-four bushels per acre, or double the product of the slovenly farming on rich and cheap lands. If these errors are avoided in Nebraska, their agricultural papers, unlike those of a neighboring State, may not be expected to suggest that if "a pound of butter comes into the city before thanksgiving, every clergyman should especially name it as a cause of thankfulness."



## POPULAR FALLACIES CONCERNING WOOL.

In commercial circles, at least, most erroneous views concerning the quality, consumption, present supply, and the influence of existing impost laws upon present prices, appear to prevail—a few of which are noticed, viz:

1. *That the quality of American wool has deteriorated.*—It has been boldly asserted that the dissemination of American Merinoes has been injurious to the quality of the wool. The most judiciously bred and carefully housed thoroughbreds have, indeed, furnished very oily unwashed fleeces, unprofitable to manufacturers on account of the loss in cleansing; but for one of these there are scores, if not hundreds of their progeny, whose wool is vastly superior to that of their coarse-wooled ancestors, and of that quality most in demand at American factories, answering for all except the finest cloths, and of sufficient length to become a substitute for combing wools in delaines. This breed has so far affected a vast improvement upon the coarse mongrel sheep constituting the great mass of flocks of former days. It is not necessary to affirm this fact before intelligent wool growers, but millions of American citizens may be misled by widely published statements of the inferior condition of our wool clip, resulting from crosses of American Merinoes upon the sheep of the west.

2. *That domestic wool is inferior to foreign.*—The very reverse of this statement is true. In strength of fibre and durability of fabric our home-grown wool is far superior to that which is imported. Every manufacturer who has tested the matter will corroborate the statement. Writers in the foreign wool-selling interest freely declare that a proportion of foreign wool is necessary for mixing with the domestic, and that in its absence the manufacture of the home fleeces must decline. The statement is utterly erroneous. The only pretext for it is in the adaptation of machinery, in certain factories, to this mixture. Every month is removing this mechanical impediment to the supremacy of domestic wools. The progress of manufacturers, in this respect, has been wonderful the past year. Cotswold and Leicester combing wools are in fact scarce, but the deficiency can be easily supplied in a few years, and the invention of our manufacturers, impatient of delay, has found an excellent substitute in the long fibre of Merino grades, by the aid of changes in the machinery by which it is wrought. Very little wool, except carpet grades, which are admitted with less duty than the wool grower pays as taxes, is now required by manufacturers from foreign sources. When the broadcloth manufacture shall be extended here, a finer Merino will be wanted, and can be supplied without foreign aid.

3. *That we need seventy millions of pounds of foreign wool to supplement the domestic supply.*—The imports of all wools, in four years of war, were but sixty-three millions per year, with six millions of shoddy—in all, more precisely, 279,183,049 pounds. In 1860 the imports were only half as much, and the home product but sixty millions; the actual manufacture but eighty millions. It is folly now to talk of sixty or seventy millions deficiency, when the trade is suffering from a surfeit of wools and woollens, notwithstanding the decrease of imports of wool since the war. On the other hand, there are persons who prefer to believe that the domestic wool product is in excess of the demand, a position equally unfounded.

4. *That the recent law has not benefited wool production and manufacture.*—The close of the war found full supplies of woollen goods, and immense stores of unused army clothing; and in anticipation of legislation affecting importation, nearly as many woollens were introduced, in a single year, as were imported during the entire period of the war. In this state of facts, utter annihilation of wool growing and manufacturing was only prevented by the operation of the law in repressing further importation, and inspiring confidence in the future,

when the immense surplus should be exhausted. It has produced all the advantages that its most sanguine friends could claim for it, in preventing in a large degree, ruinous depression and the sacrifice of flocks, and in paving the way for entire success in the future, which shall benefit every interest of agriculture and every branch of industry.

### GREENSAND MARL AS A MANURE.

To the farmers of eastern Maryland and northeastern Virginia a new means of enrichment of the soil has been added in the exploration and development of the marl beds of Prince George's and neighboring counties of Maryland.

Although these beds have been known to exist for many years, they have but recently received that attention which they merit. Very many openings have been made along the eastern edge of the District of Columbia, from whence large and increasing quantities of marl are being drawn for the uses of the vicinity.

While these beds are found in localities, as beds of sand and gravel, with shells, and are thus somewhat like alluvial sand and clay hills, they are of much older formation than the common surface soil or the marl pits which exist at the bottom of old lake beds and water-courses. Indeed they are of so respectable antiquity that at the period when these green marl beds were being deposited in shallow estuaries, there existed upon this continent no great number of animals known as the mammalia. The predominance of the type of the life of the world at that period was reptilian, and while these marl beds were being formed here, under similar conditions in Europe the vast beds of chalk which line the southern coast of England and the channel shores of France were deposited. Hence these beds are everywhere classed as belonging to the cretaceous or chalk formation, constituting a series of rocks and beds which have pretty uniform characters. Where these beds now exist marks the place at which courses of water ran carrying down large bodies of sand and gravel to be deposited in the ocean further down. In fact, where these beds now are was formerly the basin of a considerable estuary, in which tidal action was tolerably powerful. Along the eastern shore of the States there is no deposition of chalk, but in the region west of the Mississippi, where the same formation recurs the beds are better developed, more calcareous, and solidified into rock strata.

In New Jersey, Delaware and Maryland, they constitute alternate layers of sandy and micaceous clay, between which are intercalated beds of a greenish sand, the upper layers of which contain shell remains.

The lower beds of the chalk formations in Europe have been called greensand beds, on account of their color and texture. In this country the upper beds have the bluish green tint, and are found most abundantly in New Jersey, where they are met with in Monmouth, Burlington, Gloucester, and other counties. The green color of the marl beds is due to the large amount of sand made up of fine blue grains, rounded and polished like the fine rolled sand of a river bottom. These grains mixed, with yellowish clay, or sand, give the greenish tint to these strata; they resemble gunpowder in size, and are softish, so that when crushed by the finger nail a green streak is left on paper. These beds in New Jersey have a slight slope dip towards the east or southeast, and are generally worked at water-level, or a very few feet above tide-water. The whole formation in New Jersey may be from 300 to 400 feet thick, and contain three workable beds of greensand marl, some of which are, in different counties, from 20 to 30 feet thick, and are great sources of wealth to the farmer proprietors, and for some years past the Freehold and Jamesburg and Camden and Amboy railroads have carried immense quantities of it to various stations on

their lines. The charge at the pits was, a few years before the war, six or seven cents a bushel.

These beds thus described in New Jersey leave that State by crossing the Delaware river, and pass into the State of that name; the general strike or direction is southwesterly, and they can be traced in eastern Maryland at the head of Chesapeake bay, whence they pass into Anne Arundel, Prince George's, and Charles counties, where they cross the Potomac into Virginia, and thence pursue the general southwesterly trend through the southern States into Alabama, Mississippi, and Texas, where they turn round north and pass into the Indian Territory and New Mexico. As the formation passes south, it changes its mineral character. In New Jersey the fossil shells are not numerous and of a few species, chiefly of the oyster and allied species, (*Ostrea*, *Gryphea*, *Exogyra*.) and not pervading every bed. Some of the Jersey greensand beds are destitute of any shell remains. In Maryland, on the contrary, all the beds are shelly, the species are much more numerous, and embrace many of the more familiar conchiferous mollusc shells, as the *pecten* and *inoceramus*, and abound in some layers, almost to the exclusion of the greensand. This intrusion of shell remains alters very considerably the chemical nature and the agricultural value of these beds as materials for top-dressing the land. The value of the New Jersey greensand is in proportion to the amount of the green grains present. These grains, being of a peculiar mineral character, have received the name of glauconite. Dana gives the following as the mineral constitution of glauconite in 100 parts: Silica, 50; protoxide of iron, 20-25; potash and soda, 8-12, (mostly potash;) phosphate of lime, traces; moisture, 7-10. In this mineral the amount of lime is very trifling, while the quantity of potash is very great, as much as would ordinarily be yielded by some feldspars, and much more readily decomposable; hence the great value of the Jersey greensand lies in the large quantity of potash which it contains, and which the soil receives in a few years. The Jersey marl is not, however, all glauconite, as may be seen from the following analysis:

1. Marl from Squankum, Monmouth county:

Water .....	10.60
Silica .....	51.16
Protoxide of iron .....	16.20
Alumina .....	6.01
Potash and soda .....	4.27
Lime .....	3.47
Magnesia .....	2.03
Phosphoric acid.....	4.54
Sulphuric acid .....	0.42

In 100 parts.

2. Marl from Mullica Hill, Gloucester county:

Moisture .....	5.42
Organic matter .....	.....
Silica .....	60.32
Alumina and protoxide of iron.....	27.56
Phosphate of iron .....	0.37
Magnesia .....	traces
Potash and soda .....	5.50
Sulphuric acid .....	0.22

In 100 parts.\*

From the foregoing analysis we may conclude that Squankum marl contains not more than forty per cent. of glauconite, and the marl of Mullica Hill about fifty-six per cent. But even these quantities of potash are very large, and the influence of the marls upon some kinds of vegetation wonderful in its results; the quantity of lime in these samples is small, and shows how small an admixture of shelly particles exists in them. In the Maryland marls the very reverse holds good. The glauconite grains are very much less in those from Prince



George's and Charles counties, and the amount of shells vastly greater; on this account the whole nature of the marl is changed; it then contains very little potash and very large amounts of carbonate of lime. A few of very many analyses of Maryland marls, made in the laboratory of this department, will be given in the next report, for the purpose of illustrating the general composition of Maryland greensand marl.

T. A.

### RINDERPEST.

Stories are circulating in agricultural papers to the effect that rinderpest exists in Maryland, Virginia, and other sections. Not a particle of evidence is found to sustain such statements. Not a case of "rinderpest," it is perfectly safe to say; has ever appeared in this country. There has been some fatality among cattle in Maryland and Virginia, in some cases lung disease, in others "hollow horn," &c., but no European cattle plague, or anything like it. If that disease ever does appear, it will make itself felt and known without laborious efforts to advertise it into notoriety.

### IMMIGRATION.

The immense immigration to this country of the few years past is not only continued but increased. The following statement of the passengers from foreign countries, during the third quarter of the calendar year of 1867, is condensed from the report of the Director of the Treasury Bureau of Statistics. The first column represents only the immigrants:

Districts.	Immigrants.	NATIONALITY.						
		Great Britain.	German States.	Other countries of Europe.	China and Japan.	United States.	All other countries.	Total.
New York .....	70,968	31,673	31,004	8,016	.....	10,515	275	81,483
Boston and Charlestown .....	3,028	1,853	94	167	8	1,454	1,968	5,544
Baltimore .....	2,957	304	2,660	11	.....	131	25	3,131
San Francisco .....	1,925	597	12	4	1,278	.....	34	1,925
Detroit .....	1,026	.....	.....	950	.....	.....	76	1,026
New Orleans .....	209	36	129	101	.....	237	69	572
Philadelphia .....	420	342	19	55	.....	.....	4	420
Portland and Falmouth .....	212	1	.....	.....	.....	128	247	376
Texas .....	364	.....	364	.....	.....	.....	.....	364
Cuyahoga .....	79	.....	.....	.....	.....	87	148	235
Oregon .....	18	12	2	6	.....	44	.....	64
Chicago .....	29	.....	23	.....	.....	15	10	48
Providence .....	29	.....	.....	.....	.....	2	29	31
Salem and Beverly .....	16	.....	.....	.....	.....	.....	16	16
New Haven .....	2	.....	.....	.....	.....	6	8	14
Savannah .....	6	6	.....	.....	.....	.....	7	13
Erie .....	9	.....	.....	.....	.....	.....	9	9
Genesee .....	5	.....	.....	.....	.....	.....	5	5
Charleston .....	1	.....	.....	1	.....	3	.....	4
Edgartown .....	.....	.....	.....	.....	.....	1	.....	1
Total .....	81,333	34,324	34,307	9,311	1,286	12,623	2,930	95,281

## SOUTHERN INDUSTRY.

William H. Garland, correspondent making returns from Pike county, Mississippi, after deploring the status of labor relations in that section, says :

"Not only is the south destined to feel the blighting influences of the present state of things, but their baneful effects must be felt through the whole country. Let the south limit its agricultural productions to its own consumption, and it ceases to be a market for the productions of the west. What a beautiful chain of self-interest bound this whole country together ! The south consumed the productions of the west ; the north manufactured the productions of the south, and sent them, increased by her labor, to the west to bring comfort to their homes and to give life and vitality to her lands, and thus this great country was bound together by a golden circle of self interest. But unless some change shall come in the councils of my country, this chain is broken, and the broad fields of the south will no more bloom with joy, happiness, and wealth."

The assumed evil here deplored, the breaking of the chain of abject dependence of one section upon the industry of the others, will yet prove the industrial salvation of the south. The cotton States, producing mainly one staple, sent it through numerous middle-men, at great expense, to Europe, and brought food supplies from the west, clothing from the east, and various luxuries from foreign lands, paying enormous prices and running in debt in this unprofitable exchange of products, while the country was left bare of improvements, destitute of good roads and public buildings, with a general air of poverty and thriftlessness. A shout of rejoicing should resound through the south that this false and ruinous system of slavish dependence is broken, with a possibility that a varied and self-supporting husbandry may be substituted, manufactures be built up, and the women and children of the poor furnished with suitable and congenial employment. The transition state may be bitter, but sweet results will follow, if all, black and white, shall cease idling and repining, and put their shoulders to the wheel of progress. The old complaint that the cotton States were enriching the north was true only in this comparative sense : they were impoverishing themselves by a suicidal policy, while States with varied and well-balanced industries were becoming enriched through a system of universal and profitable labor. They will become prosperous, if ever, when they grow their own grain, make their own cloth, and sell only the surplus results of their industry.

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 RECEIPTS OF WHEAT.

William J. Langson, secretary of the Chamber of Commerce, Milwaukee, Wisconsin, furnishes the following statement of the receipts of wheat at that point from September 1 to November 16, 1867, compared with the movement of four preceding crops :

	Bushels wheat.
Received September 1 to November 16, 1867 .....	7,938,879
September 1 to November 16, 1866 .....	5,877,402
September 1 to November 16, 1865 .....	5,408,245
September 1 to November 16, 1864 .....	1,658,901
September 1 to November 16, 1863 .....	5,740,953

The above figures represent wheat alone. Including flour reduced to bushels the figures would compare as follows :

	Bushels wheat and flour.
Received September 1 to November 16, 1867 .....	9,088,284
September 1 to November 16, 1866 .....	6,778,387
September 1 to November 16, 1865 .....	6,022,340
September 1 to November 16, 1864 .....	1,988,886
September 1 to November 16, 1863 .....	6,475,653

Showing an increase of about 34 per cent. over the receipts of 1866.

The following figures show the receipts of flour, wheat, corn, and oats at Chicago, up to the 14th of December, for the years 1867 and 1866 :

	1867.	1866.
Flour, (barrels) .....	1,789,140	1,775,016
Wheat, (bushels) .....	12,889,512	11,853,980
Corn .....	23,196,332	31,917,924
Oats .....	10,906,763	9,945,578

The receipts of flour and wheat for the same years, from July 29 to December 14, compare as follows :

	1867.	1866.
Flour (barrels).....	990,666	933,619
Wheat, (bushels).....	11,161,417	8,409,105

Showing an increase for the months named of over six per cent. in receipts of flour and nearly 33 per cent. of wheat.

The receipts of breadstuffs at New York, from all sources, for the eleven months ending November 30, 1867, were as follows, compared with those of two preceding years :

	1867.	1866.	1865.
Wheat flour, (barrels).....	2,409,476	2,494,979	3,228,393
Corn meal .....	196,717	217,906	279,879
Wheat, (bushels).....	9,448,979	4,546,831	7,810,347
Rye .....	745,678	1,048,675	677,503
Oats .....	7,890,554	7,698,352	9,056,799
Barley .....	2,538,730	4,832,766	2,904,050
Peas .....	655,385	406,582	140,586
Corn .....	14,600,260	20,689,802	14,794,440

It will be seen that the increase of wheat receipts over last year is upwards of 100 per cent, while corn has fallen off more than six million bushels.

### PORK-PACKING IN CHICAGO.

Up to the 21st of December the pork-packing in Chicago sums up 528,981 head, against 165,000 same period last year, and 55,000 the previous year. The receipts of hogs for the week ending as above sum up as follows : Live, 73,149 ; dressed, 26,453 ; total, 99,602 ; and the shipments, live, 6,883 ; dressed, 1,034 ; total, 7,917 ; leaving for packers, city use, and numbers left over in the pens, 91,685 head. For the corresponding period last year the receipts were, live, 56,824 ; dressed, 16,388 ; total, 73,212 ; and the shipments, live, 2,606 ; dressed, 5,812 ; total, 8,218 ; leaving for packers, &c., 64,994 head. The hogs now arriving are very superior to those received early, and it is said that the best are yet to come.

The receipts of hogs at Cincinnati, for the week ending December 24, were 35,448 head against 64,574 for the corresponding week last year. Total for

the season to the above date, 283,577 head, against 244,010 for the same time last year, and 193,934 in 1865. The total number of hogs packed in Cincinnati last season was 462,610, and for the previous season 354,079.

### TRADE WITH SAN FRANCISCO.

The bottoms that have brought wheat from California have returned with large cargoes of the products of industry. That farmers may see what this trade consists of, the following statement is given for the quarter ending September 30, 1867, as published in the December report of the Statistical Bureau of the Treasury.

Commodities.	Quantity.	Value.
Agricultural implements.....	.....	\$8,624
Books and maps.....	.....	433,410
Candles, tallow, and all other.....lbs..	70,000	14,025
Clocks, and parts of.....	.....	1,100
Clothing, wearing apparel.....	.....	1,378,400
Cotton, manufactures of.....	.....	4,693,296
Drugs and medicines.....	.....	158,538
Fancy articles.....	.....	676,300
Gold and silver, manufactures of.....	.....	1,600
Hats, caps, and bonnets:		
Of wool, fur, or silk.....	.....	100,515
Of palm-leaf, straw, &c.,.....	.....	124,860
Glass and glassware, cut.....	.....	2,250
Hops.....lbs..	4,300	2,400
India-rubber, manufactures of.....	.....	271,295
Iron and steel, manufactures of:		
All other manufactures of.....	.....	486,667
Cutlery.....	.....	5,475
Muskets and rifles.....number..	8,336	50,000
Leather, and manufactures of.....	.....	
Boots and shoes.....pairs..	230,835	1,385,210
Saddlery and harness.....	.....	55,000
Manufactures, all other.....	.....	5,400
Locomotives, and other machinery not specified.....	.....	77,425
Lumber, and manufactures of wood, other.....	.....	1,097
Ordnance stores, cartridges, and fuzes.....	.....	16,800
Paints, prepared.....	.....	13,279
Paper and stationery.....	.....	12,223
Provisions:		
Butter.....lbs..	1,210,330	402,170
Fruit, green, ripe, dried, not specified.....	.....	8,975
Sewing machines.....	.....	1,512
Soap, not specified.....lbs..	6,300	628
Spirits, distilled from grain.....galls..	52,400	27,025
Other materials.....galls..	68,925	42,070
Trunks and valises.....	.....	489
Tobacco, manufactured.....lbs..	64,330	16,702
Leaf, manufactured.....lbs..	5,386,980	624,083
Total.....	.....	11,098,843

### CALIFORNIA AGRICULTURE.

*Los Angeles county, California.*—From the report of the assessors of this county, in 1866, we learn that there were 14,400 acres under cultivation in the county; of which 650 acres were in wheat, producing an average of 20 bushels to the acre; in barley 5,000 acres, averaging 30 bushels; rye, 20 acres, averaging 20 bushels; corn, 4,500 acres, averaging 40 bushels; potatoes, 1,000 acres, averaging 250 bushels. We annex a table showing the productions of



the county in 1860, as compared with those of 1866, with the cash value of the latter.

	1860.	1866.	Value, 1866.
Wheat, bushels .....	55, 196	13, 000	\$10, 333
Barley, bushels .....	46, 455	150, 000	108, 000
Rye, bushels .....	95	400	320
Corn, bushels .....	85, 010	180, 000	112, 500
Beans and peas, bushels .....	2, 465	5, 000	4, 500
Potatoes, (Irish,) bushels .....	15, 034	250, 000	125, 000
Potatoes, (sweet,) bushels .....	19, 200	.....	.....
Wool, lbs .....	209, 869	405, 000	60, 750
Wine, gallons .....	162, 980	1, 000, 000	400, 000
Brandy, gallons .....	.....	100, 000	250, 000
Oranges, estimated value of .....	.....	.....	527, 940
Lemons, estimated value of .....	.....	.....	88, 920
Walnuts, estimated value of .....	.....	.....	105, 240
			<hr/>
			1, 794, 503
			<hr/>

It will be seen that in the above table no account is taken of the grazing or stock interest, with the exception of the wool product, nor of anything but the staple articles of produce. A large decline in wheat culture is shown, but in all other products named the increase is marked, especially in wool and wine. The culture of the tropical fruits appears to have almost entirely grown up since 1860, yet yielded to the country nearly three-quarters of a million of dollars in 1866, and, with the large increase of trees in bearing, the amount must be considerably larger the present year. There are sufficient young trees planted in the county to double the orange crop in two years, and with the interest displayed in other tropical fruits as well, Los Angeles promises even more for the next five years than the above figures show for the past.

### THE COMPOSITION AND FEEDING VALUE OF STRAW.

The above was recently the subject of a very interesting and instructive address before the "Athy Farmers' Club," Ireland, delivered by Dr. Charles A. Cameron, from which are condensed some facts and figures which may prove of practical value to our American farmers, who generally have regarded straw as of little value for fodder, and in some sections burn it to get rid of it. Dr. Cameron said that while many farmers consider straw the most valuable constituent of home-made fertilizers, chemical analysis proves that it is perfectly insignificant, and that as a constituent of stable manure it is chiefly used as an absorbent of the liquid egesta of the animals whose litter it has formed. Straw has been regarded as almost entirely innutritious, but within the last few years it has been largely employed by several of the most intelligent and successful feeders in England, who report so favorably upon it as an economical feeding stuff that it has risen considerably in the estimation of a large number of the agricultural public. Dr. C. thinks that, unless urgently demanded for litter, straw should be used as food for stock, for which purpose he considers it equal, if not superior, to hay, when relative prices are considered. From analyses quoted it appears that straw is more valuable when cut in the ripe state than when permitted to overripen, and that green straw contains a far greater amount of nutriment than is found in the ripe article. It appears, also, that the most nutritious kind of straw equals the best varieties of turnips in the amount of flesh-forming principles, and greatly exceeds them in its proportion of fat-forming elements. The



different kinds of straw stand in the following order in amount of nutriment: 1, pea haulm; 2, oat straw; 3, beanstalks with the pods; 4, barley straw; 5, wheat straw; 6, beanstalks without the pods. Dr. C. gives the following

## ANALYSES OF IRISH OAT STRAW.

	From county Wicklow.	From Dublin market.			
	No. 1.	No. 2.	No. 3.	No. 4.	
Water.....	14.00	14.00	14.00	14.00	
Flesh-forming principles—					
Soluble in water.....	4.08	2.02	2.04	1.46	
Insoluble in water.....	2.09	3.16	3.00	2.23	
Oil.....	1.84	1.40	1.26	1.00	
Sugar, gum, and other fat-forming matters.....	13.79	12.67	10.18	11.16	
Woody fibre.....	59.96	61.79	65.45	65.29	
Mineral matter.....	4.24	4.96	4.07	4.86	
	100.00	100.00	100.00	100.00	

## ANALYSES OF IRISH WHEAT STRAW.

	Green, changing to yellow. County Kildare.	Ripe. County Dublin.	Overripe. County Dublin.	From the Dublin markets.		
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Water.....	13.00	13.15	12.14	10.88	11.22	12.12
Flesh-forming principles—						
Soluble in water.....	1.25	0.98	0.44	0.06	0.42	0.30
Insoluble in water.....	1.26	1.40	1.41	1.90	1.00	1.76
Oil.....	1.22	1.13	1.14	0.90	1.17	1.08
Sugar, gum, and other fat-forming matters.....	4.18	3.98	3.88	4.08	3.89	4.30
Woody fibre.....	75.84	76.17	77.76	78.67	79.18	77.15
Mineral matter, (ash).....	3.25	3.19	3.23	3.51	3.12	3.29
	100.00	100.00	100.00	100.00	100.00	100.00

These analyses show that, if wheat straw is allowed to overripen, a very large proportion of its nutritive principles is eliminated and altogether lost, and a considerable portion of the remainder converted into an insoluble and therefore less easily digestible state. Nor is there any advantage to the grain in allowing it to remain uncut after the upper portion of the straw has changed from a green to a yellowish color; on the contrary, it loses a portion (often a very considerable one) of its nitrogenous or flesh-forming constituents. It has been clearly proved that wheat cut when green yields a greater amount of grain and of better quality than when allowed to ripen fully. As compared with white turnips, the

nutritive value of oat straw stands very high; for while the former contain but little more than one per cent. of flesh-formers, and less than five per cent. of fat-formers, the latter includes about four per cent. of flesh-formers and thirteen per cent. of fat-formers. Again, while the woody fibre in turnips is only about three per cent., it constitutes no less than sixty per cent. of oat straw.

In comparison with hay—considering the prices of both articles—oat straw also stands high, as will be seen by comparing the following analysis (mean results of twenty-five analyses) of common meadow hay with that of properly harvested straw:

#### ANALYSIS OF MEADOW HAY.

Water .....	14.61
Flesh-forming constituents .....	8.44
Respiratory and fatty matter .....	43.63
Woody fibre .....	27.16
Mineral matter, (ash) .....	6.16
	<hr/>
	100.00
	<hr/>

At one time it was the general belief that woody fibre was incapable of contributing in the slightest degree to the nutrition of animals, but recent investigations prove that it is to a certain extent digestible and that the straw of the cereals possesses a far higher nutritive power than is commonly ascribed to it, and when properly harvested contains from twenty to forty per centum of undoubted nutriment.

Dr. Cameron recommends that straw should either be cooked or fermented before being used, as in either of these states its constituents are far more digestible than when the straw is merely cut, or even when it is reduced to chaff. An excellent mode of treating straw is to reduce it to chaff, subject it to the action of steam, and mix it with roots and oil-cake or corn. A better and cheaper plan is to mix the straw with sliced roots, moisten the mass with water, and allow it to remain until a slight fermentation has set in. This process effectually softens and disintegrates the woody fibre and sets free the stores of nutritious matter which it envelops.

In an economic point of view the theoretic deductions will be found to harmonize with the results of actual feeding experiments. Assuming that one hundred parts of oat straw contain, on an average, one part of oil, four parts of flesh-formers, ten parts of sugar, gum, and other fat-formers, and thirty parts of digestible fibre, and that the price of straw is \$7 50 per ton, (the average price in Ireland,) we have, at that cost, the following quantities of digestible substances:

#### ONE TON OF OAT STRAW AT \$7 50.

Oil .....	22.4 lbs.
Flesh-forming principles .....	89 6 "
Sugar, gum, and other fat-forming substances .....	224 "
Digestible fibre .....	672 "
	<hr/>
	1008 "
	<hr/>
Total amount of fat-formers, calculated as starch .....	952 lbs.
Add flesh-formers .....	89.6 "
	<hr/>
Total amount of nutritive matter .....	1041.6 "
	<hr/>

A fair sample of linseed cake contains twenty-six parts of flesh-formers,

twelve parts of oil, thirty-four parts of gum, mucilage, sugar, &c., and six parts of woody fibre, and costs \$55 per ton.

ONE TON OF LINSEED CAKE AT \$55 PER TON.

Flesh-forming principles .....	582.4 lbs.
Oil.....	268.8 "
Gum, sugar, and other fat-formers .....	761.6 "
Woody fibre .....	74.4 "
	<hr/>
	1687.2 "
	<hr/>
Total amount of fat-formers, calculated as starch.....	1508 "
Flesh-formers .....	582.4 "
	<hr/>
Total amount of nutriment .....	2090 4 "
	<hr/> <hr/>

These comparisons are instructive and important. From them we learn that we pay \$55 for 2,000 pounds of nutriment when we purchase a ton of linseed cake; whereas, when we invest \$7 50 in a ton of straw, we receive 1,000 pounds of digestible aliment, and it is believed that when the latter article is cut in proper season and well harvested, its composition will be found much superior to that detailed in the comparative analysis.

Digestion is promoted by mixing with the aliment a due proportion of oily or fatty matter. Straw is relatively deficient in the flesh-forming principle and abounds in fat-forming elements, of which, however, the most valuable (oil) is the least abundant. Now, if we add to straw a due proportion of some substance very rich in flesh-formers and oil, the compound will possess, in nicely adjusted proportions, all the elements of nutrition. Perhaps the best food for this purpose is linseed meal, which contains about twenty-four per cent. of flesh-formers, thirty-five per cent. of very bland oil, and twenty-four per cent. of sugar, gum, and mucilage. Linseed cake may be substituted for linseed meal, though the meal is rather the best, but costs fifteen per cent. more. As linseed possesses laxative qualities it cannot be largely used; the addition of bean-meal will neutralize the relaxing influence of the oily seed. Rape-cake will be found more economical than linseed cake. If free from mustard, well steamed, and floured with a little treacle, or a small quantity of locust beans, it will be readily consumed by dairy or fattening cattle.

### HUNGARIAN AGRICULTURE.

We find the following facts relating to the productions, resources, &c., of Hungary, in *l'Echo de l'Agriculture*:

The kingdom of Hungary comprises Slavonia, Croatia, the Hungarian coast, and the principality of Transylvania, comprehending a superficies of 5,872 geographical leagues, and constituting fifty-four per cent. of the total superficies of the Austrian empire. The population of the kingdom is 15,200,000 souls, forming forty-nine per cent. of that of the empire. The cultivated surface of the kingdom is occupied as follows:

	Hectares.	Acres.
Arable land .....	9, 960, 631, 275	or 24, 590, 308, 459
Meadows .....	4, 112, 440, 825	or 10, 152, 588, 285
Pasturage .....	4, 976, 533, 575	or 12, 285, 817, 263
Wood .....	8, 816, 859, 100	or 21, 766, 620, 901
Vineyards .....	442, 904, 100	or 1, 093, 419, 496
	<hr/>	<hr/>
Total .....	28, 309, 368, 875	or 69, 888, 754, 404
	<hr/> <hr/>	<hr/> <hr/>

which represents fifty-three per cent. of the cultivated surface of the empire. The annual product of cereals and other grains is as follows :

	Hectolitres.	Bushels.
Wheat .....	17, 500, 000 or	48, 146, 000
Meslin .....	10, 100, 000 or	27, 787, 120
Rye .....	17, 500, 000 or	48, 146, 000
Maize .....	23, 400, 000 or	64, 378, 080
Barley .....	12, 300, 000 or	33, 839, 760
Oats .....	22, 200, 000 or	61, 076, 640
Colza .....	620, 000 or	1, 705, 744
Beans and peas .....	1, 230, 000 or	3, 383, 976
Total .....	104, 850, 000	288, 463, 320

The annual product of flour is 25,000,000 quintals of two cwt. each. The exportation of flour from Hungary has increased from about 200,000 quintals in 1850, to over 1,000,000 quintals at the present time.

### THE BRITISH COTTON TRADE.

Descriptions.	Imports from Jan. 1 to Nov. 21.		Exports from Jan. 1 to Nov. 21.	
	1866.	1867.	1866.	1867.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
American .....	1, 093, 746	1, 117, 026	197, 451	215, 635
Brazil, Egypt, &c .....	645, 912	637, 122	132, 545	109, 008
East India, China, and Japan .....	1, 508, 887	1, 156, 319	503, 779	450, 693
Total .....	3, 248, 545	2, 910, 467	833, 775	775, 336

	Stock, Nov. 21.		Consumption from Jan. 1 to Nov. 21.	
	1866.	1867.	1866.	1867.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
	694, 730	483, 410	2, 089, 360	2, 183, 210

The above figures show—

A decrease of imports, compared with the same date last year, of . . .	Bales. 338, 078
An increase of quantity taken for consumption of .....	98, 850
A decrease of actual export of .....	58, 439
A decrease of stock of .....	211, 320



The following is the stock of India and eastern cotton on hand :

	Surat and Seinde.	Madras.	Bengal and Rangoon.	China and Japan.	Total.
Stock November 21, 1867.....	13,015	48,476	35,783	175	107,094
Stock November 21, 1866.....	19,377	40,150	28,886	3,647	94,815
Stock November 21, 1865.....	9,698	12,802	10,818	2,330	40,720

### IRISH BUTTER.

The receipts of butter at London and Liverpool from Ireland during the last three years were as follows :

	1865.	1866.	1867.
	<i>Firkins.</i>	<i>Firkins.</i>	<i>Firkins.</i>
London.....	73,351	50,013	34,305
Liverpool.....	443,759	420,153	420,261
Total.....	517,110	470,166	454,566

The large decrease is the more remarkable when we compare the above figures with the number of milch cows in Ireland. In 1865 there were 1,387,448 cows; in 1866 they had increased to 1,481,446; and in 1867 to 1,519,720. Assuming that each firkin of butter weighed 90 pounds, the exports of 1865 were equal to 34 pounds for each milch cow. In 1866 they had fallen to 29 pounds, and in 1867 to 27 pounds, to each cow.

While the Irish arrivals in London have decreased, the foreign supply has increased as follows :

Receipts in 1865, 448,264 casks; 1866, 502,979 casks; 1867, 564,668 casks.

The price of Cork butter in October, 1865, was \$32 50; in 1866, \$30; in 1867, \$27 50. The price of Dutch butter in 1865 was \$31 50; in 1866, \$31; in 1867, \$27 50.

### AGRICULTURAL RETURNS FOR GREAT BRITAIN.

By a careful average of local averages, from reports similar to those of this department, though not so systematic and general, the following estimates for the present season are made :

Yield of wheat per acre in England and Wales, 24.4 bushels; barley, 33.7 bushels; oats, 41.2 bushels; beans, 27.7 bushels; peas, 22.9 bushels; potatoes, 5.3 tons; turnips, 15.1 tons; swedes, 16.9 tons; mangolds, 20 tons.

From returns received in the statistical department of the British Board of Trade, the aggregate acreage under all kinds of corn crops in England and Wales was 7,941,578 acres, against 7,921,244 acres returned in 1866; and in Scotland 1,367,012 acres, against 1,366,540 acres in 1866.

The land under wheat is returned for England and Wales at 3,255,917 acres, against 3,275,293 acres in 1866; and for Scotland at 115,118 acres, against 110,101 acres in 1866. Estimating the average product of wheat at 28 bushels per acre, the aggregate yield for 1867 would be 94,388,980 bushels, against

94,791,032 bushels in 1866. This year's estimate, however, gives only 24 bushels to the acre, which reduces the crop to about 81,000,000 bushels.

The number of cattle is returned for England and Wales at 4,017,790, against 3,848,435 in 1866; and for Scotland as 979,170, against 937,401 in 1866.

Sheep are returned for England and Wales to the number of 22,097,286, against 16,793,204 in 1866; and for Scotland to the number of 6,893,603, against 5,255,071 in 1866. The large increase in the number of sheep returned in 1867, as compared with the previous year, is accounted for by the fact that the returns in 1866 were made for the purpose of the cattle-plague inquiry at a date preceding the lambing season in some parts of Great Britain.

### MOVEMENT OF LIVE STOCK IN FRANCE.

The imports of live stock into France in the first eight months of this year were as follows, as compared with the corresponding periods of 1866 and 1865:

Description.	1867.	1866.	1865.
Stallions .....	874	460	549
Geldings .....	8,782	4,999	4,646
Mares .....	3,797	1,806	1,662
Colts .....	1,303	1,170	1,029
Mules .....	301	194	145
"Beasts" .....	73,951	37,507	37,990
Bulls .....	996	1,088	1,428
Heifers .....	2,000	1,035	1,587
Cows .....	39,899	24,496	45,541
Young bulls .....	2,326	530	1,189
Calves .....	23,415	22,468	33,599
Sheep .....	643,085	405,172	509,320
Pigs .....	63,463	24,955	29,742
Sucking pigs .....	44,690	5,608	53,602

The exports of live stock from France in the same periods were as annexed:

Description.	1867.	1866.	1865.
Stallions .....	410	686	902
Geldings .....	1,978	10,204	1,908
Mares .....	1,088	6,388	1,865
Colts .....	644	290	599
Mules .....	9,274	11,478	13,122
"Beasts" .....	32,944	37,158	14,663
Bulls .....	396	738	387
Cows .....	6,486	10,748	9,485
Young bulls .....	60	267	178
Calves .....	6,568	11,939	7,958
Heifers .....	329	1,115	500
Sheep .....	52,391	138,246	69,677
Pigs .....	30,366	44,293	40,275
Sucking pigs .....	15,748	6,665	12,011

The imports of "beasts" and sheep will be seen to have largely increased this year, while the exports have declined—a state of things which is probably attributable to the exceptional demand occasioned for animal food in France, in consequence of the Paris Exposition.

## DOG TAX IN ENGLAND AND SCOTLAND.

The reduced dog tax seems likely to be better collected than the higher duty has been. The tax on dogs in England was assessed at only 301,281 dogs in 1856; in 1866 the number had increased to 358,472, and 79,281 dogs were returned by surveyors of taxes as exempt. Between the 6th of April and the 31st of July, 1867, 656,977 dog licenses were taken out; 367,775 were granted by stamp distributors, and 220,202 by officers of excise. In Scotland only 36,365 dogs were assessed for taxation in the year ending the 24th of May, 1866, and 44,556 were returned by surveyors of taxes as exempt. Between the 25th of May and the 31st of July, 1867, 88,481 dog licenses were granted.

## CALIFORNIA ITEMS.

George Gordon, of San Francisco, states that an arrangement has been made with an association of German and French gentlemen, now engaged in the sugar business in Europe, to erect in California factories for the manufacture of raw sugar from beets, upon condition that the beets grown in 1868, from seed, prove as rich in saccharine matter as represented; that the sugar refineries then contract for the raw sugars, and that the land-owners contract to grow sufficient beets to keep the several factories working—about fifteen hundred acres to each factory. The parties propose to invest \$1,500,000 in the business, and to send over six hundred to seven hundred skilled workmen.

During the past ten years California has imported an average of three thousand firkins of butter per month, at an expense of over \$1,000,000 annually. There is no good reason why California should not export twice the quantity of butter now imported.

The great ox "Oregon Baby" died in San Francisco last month, when he was being fatted for Christmas. He weighed 3,080 pounds, and was daily increasing.

A strawberry patch of one hundred and thirty acres is reported in Alameda county, California.

It is claimed that California has this year produced thirty-four million gallons of wine.

J. Landsberger, of San Francisco, manufactures monthly two hundred dozen champagne, from California wines. He has on hand twenty-five thousand bottles of it, in different stages of ripening.

The French journal *L'Invention*, in speaking of the California wines at the exhibition, says: "We believe this manufacture is destined at no distant day to compete successfully with us in the markets of the New World."

The sheep firm of Flint, Bixby & Co., Monterey county, California, own 75,000 sheep, which feed on a range of 200,000 acres. The firm commenced sheep raising fifteen years ago with a capital of \$5,000. The first flock was of the common Mexican breeds, which have been improved by imported fine-wool rams.

The receipts of flour and wheat at San Francisco, from July 1 to November 27, aggregate, in round numbers, 4,000,000 centals (100 pounds,) being an increase of about 1,000,000 centals over the same period of 1866. Exports for same time, 3,000,000 centals—1,000,000 centals greater than during corresponding period of last year. The San Francisco Commercial Herald estimates a further export of 2,000,000 centals for the crop of 1867.

Hop culture is receiving more attention in California. An Englishman in Los Angeles county claims to have raised two thousand pounds to the acre. The State now imports more than it produces.

A company is organizing in Marysville for the construction of a mill for the manufacture of oil from flaxseed, sunflower seed, castor beans, mustard seed, &c.

From January 1 to October 1, of the current year, one hundred and seventy-four ships sailed from San Francisco with cargoes of wheat; of which one hundred and thirteen went to Europe, thirty-one to Atlantic ports, and twenty to China.

A pear weighing three pounds is reported to have grown on a yearling tree in Placer county.

The treasure receipts at San Francisco for October last amounted to \$4,333,000; the exports of specie for the same period, \$3,026,722.

Experiments with the Early Goodrich potato in Amador county show a product of one hundred pounds from one pound of seed, and also demonstrate that two crops a year can be grown upon the same ground.

The Marysville Gas Company is consuming the castor bean cake for making gas. The cake costs about twenty dollars per ton.

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#### FACTS FROM VARIOUS QUARTERS,

According to the census of 1840, the hop crop of the United States was but 1,238,412 pounds. In 1850 it had increased to 4,467,029 pounds; in 1860 the product was nearly 11,000,000 pounds, and this year it will probably reach 20,000,000 pounds; one-half of which are grown in New York; Wisconsin ranks next, raising about 7,000,000 pounds, of which Sauk county produced 4,000,000.

The cranberry crop of 1867 is estimated at not less than 187,500 bushels; New Jersey producing 105,000 bushels, New England 37,500 bushels, and the western States 45,000 bushels; at an average of \$4 per bushel the crop will yield \$750,000.

Mr. George W. Blanchard, of Gardiner, Maine, reports to the Maine Farmer that he last spring set out seven hives of bees, with the following results: 526 pounds of box honey at 30 cents, \$157 80; 70 pounds at 25 cents, \$17 50; one swarm sold, \$10; two swarms unsold, \$20; total, \$205 30; leaving the original hives strong in bees and well supplied with honey. Mr. B. attributes his success mainly to the fact that his hives were transferred, with the drone combs left out, together with early spring feeding to promote breeding, and plenty of box room. He had but four swarms, three coming from one hive.

One of the principal exports of Texas is cattle, yet the State imports butter, cheese, and even milk.

The salmon eggs placed in the trout ponds at Charlestown, New Hampshire, commenced hatching on the 11th instant.

The anthracite coal production for 1867 will aggregate about 12,000,000 tons, an increase of 350,000 tons over the preceding year.

The petroleum exports from January 1 to December 24, 1867, from the port of New York, reach 33,190,037 gallons, and from other ports, up to 21st Decem-



ber, 32,317,916 gallons; total, 65,507,953 gallons; against 65,973,641 gallons for same time in 1866, 28,115,915 gallons in 1865, and 31,811,842 gallons in 1864.

The fruit sent to the Chicago market this year was sold for \$1,250,000.

In central Illinois twenty acres have been planted with apple seed this year. The trees are large enough to graft, and are estimated to number 2,500,000.

T. V. Hayden, United States geologist for Nebraska, states that there are, in the basin between the South Boulder and Clear creek, at the base of the Rocky mountains, in Colorado, from eight to eleven beds of coal, from five to thirteen feet in thickness, making an aggregate thickness of at least thirty to fifty feet of solid coal.

Imported eggs cost Great Britain from eight to ten millions of dollars last year.

There are several potato starch factories in successful operation in Coos county, New Hampshire. One establishment at Milan last season manufactured starch enough to pay for the mill and all expenses. Another, in Jefferson, cleared \$6,000. They pay thirty cents per bushel for potatoes.

It is said that there are not enough hogs in North Carolina to eat the mast in the woods.

The cheese factory at Elkhorn, Wisconsin, has manufactured 36,665 pounds of cheese the past season.

Attempts have been made to acclimatize the English sparrow in Canada.

The annual yield of the Nova Scotia coal mines is estimated at \$1,200,000; gold mines, \$600,000.

The Cambridge (Massachusetts) Horticultural Society recommends the following as the best varieties of pears for family use in that locality: Bartlett, Louise Bon, Seckel, Sheldon, Duchess D'Angouleme, Beurre D'Anjou, Lawrence, Hovey, Le Cure, Rostiezer, and Doyenne l'Ete. Of these, according to Mr. Quinn, of New Jersey, who speaks from an experience of seventeen years, only five have been profitable in the latter State, and his highest success has been with the Duchess and the Bartlett.

The Tennessee legislature has before it a bill for the protection of wool-growers, by which dogs will be taxed \$2 a head; one dog to each family to be exempt.

Two hundred and seven river barges, with an average capacity of 150 tons, are engaged in the St. Paul trade. Nearly all the grain and flour shipped by the river is freighted in barges.

Orders in council have been issued permitting the importation of horses, hoofs, and hides into England.

France sows annually about 14,000,000 acres with wheat, which yields a variable crop of 225,000,000 to 300,000,000, and even 330,000,000 bushels. The best wheat lands pay a rent of from \$10 to \$20 per acre, and yield from 37 to 52 bushels per acre. On many other lands, however, the yield is only 14 to 18 bushels.

The "mud crop" of the streets of Paris is sold annually. In 1823 it brought \$15,000. It now brings \$120,000; and when left in rotting tanks is sold for manure at the increased valuation of \$600,000.

# METEOROLOGY.

[Compiled in the Department of Agriculture from the reports made by the observers for the Smithsonian Institution.]

## OCTOBER AND NOVEMBER, 1867.

*Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature and amount of rain, (in inches and tenths,) for October and November, 1867, at the following places, as given by the observers named. The daily observations were made at the hours of 7 a. m. and 2 and 9 p. m.*

States and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
<b>MAINE.</b>												
		°		°	°	In.		°		°	°	In.
Steuben .....	19	68	5, 24	27	46.1	7.20	4	56	20	7	34.4	4.29
Lee .....	19	71	5	24	46.8	3.05						
West Waterville...	19	76	4	30	48.4	5.30	11	54	19	10	32.6	2.05
Gardiner .....	19	68	25	31	46.4	4.60	2	59	19	12	34.5	2.85
Lisbon .....						5.23						3.80
Standish .....	19	74	25	31	47.5	2.99	10	60	19	4	32.6	2.30
Cornish .....	19	74	24	27	46.8	4.25	10	61	19, 30	8	32.2	2.84
Cornishville .....	19	74	23	32	48.2	4.62	2, 10	59	19	10	33.0	2.55
Averages.....					47.2	4.66					33.2	2.95
<b>NEW HAMPSHIRE.</b>												
Stratford .....	19	73	24	22	44.2	3.46	2, 10	60	30	0	28.6	3.11
North Barnstead...	19	74	23, 24	33	50.0	2.61	10	62	19, 30	12	37.1	2.41
Claremont .....	19	75	24	25	48.0	3.70	11	65	19	4	34.8	2.42
Portsmouth.....	17, 18	70	24	30	51.0							
Averages.....					48.3	3.26					33.5	2.65
<b>VERMONT.</b>												
Lunenburg .....	18, 19	70	2	22	55.7	1.50	10	58	30	1	30.1	2.50
North Craftsbury ..	19	68	24	25	44.5	3.42	2, 10	56	7	3	29.2	2.22
Randolph .....	18	70	24	23	48.6	4.00	2	60	19	1	31.9	1.22
Middlebury .....	18	69	4	30	49.0	3.48	10	62	30	7	34.6	1.18
Averages.....					49.5	3.10					31.5	1.78
<b>MASSACHUSETTS.</b>												
Kingston .....	19	80	25	32	52.4	4.25	2	66	19	15	42.7	1.28
Topsfield .....	19	77	24, 26	32	51.6	6.43	3	67	19	17	42.2	2.57
Lawrence .....	19	73	24	29	48.3	4.79						
Georgetown .....	19	78	25	32	51.0		2	65	19	13	38.3	
Newbury .....	18, 19	75	24	29	49.4		2	64	19	13	37.6	
Milton .....	19	78	25	28	51.8	2.74	9	70	19	12	36.9	3.80
North Billerica.....	10	78	25, 26	30	49.5		10	61	19	12	38.1	

Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

States and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
MASS.—Continued.		°		°	°	In.		°		°	°	In.
West Newton.....	18	83	24, 25	28	53.0	4.00	9	73	19	12	37.0	2.35
New Bedford.....	19	74	24	33	53.1	3.91	9	64	19	16	40.9	3.00
Worcester.....	18, 19	75	24	31	51.4	3.79	9	68	19	12	38.6	2.19
Mendon.....	18	74	24	30	49.4	.....	10	63	19	11	37.5	.....
Lunenburg.....	19	77	24	31	50.1	3.45	10	65	19	8	36.0	2.05
Amherst.....	18	76	25	27	49.9	3.85	2, 10	65	19, 30	16	37.9	4.31
Richmond.....	18	76	24	26	52.2	6.12	3	67	18	10	37.1	4.47
Williams College...	18	73	24	25	48.9	1.27	2, 10	63	30	12	36.4	3.39
Averages.....					50.8	4.05					38.4	2.93
RHODE ISLAND.												
Newport.....	19	76	24	30	51.5	4.35	9	63	19	15	4.00	3.14
CONNECTICUT.												
Pomfret.....	19	75	24	32	49.3	3.21						
Columbia.....	18, 19	80	24, 25, 26	32	53.4	.....	3	62	18	16	39.9	.....
Middletown.....	19	79	24	28	52.4	4.12	2	69	18, 30	19	40.3	2.75
Colebrook.....	19	78	24	23	48.6	.....	10	64	18, 30	9	35.1	.....
Groton.....	20	78	25	30	54.3	5.01	9	68	19	17	41.6	2.12
Averages.....					51.6	4.11					39.2	2.44
NEW YORK.												
Moriches.....	19	84	25	35	57.8	6.82	2	69	19	21	46.6	2.99
South Hartford....	16	78	13, 23	28	53.4	2.72	1, 11	68	18, 30	14	38.9	3.00
Troy.....	18	77	24	32	51.6	3.20	2	66	30	15	39.7	1.64
Germantown.....	19	80	25	33	.....	4.10	2, 10	68	18	18	41.4	3.00
Garrison's.....	18	78	24, 25	33	52.0	4.26	10	63	30	18	42.0	2.60
Throg's Neck.....	19	80	24	40	56.0	.....	9	67	30	20	44.0	.....
Deaf and Dumb Ins.	16	76	24	39	54.3	5.12	9	67	19	20	44.1	2.25
Columbia College..	19	75	2	32	53.1	2.11	9	64	30	21	42.7	1.61
St. Xavier's College.	19	77	24	38	54.2	4.47	9	66	30	22	41.2	1.86
Stapleton.....	2	87	25	38	57.5	3.83	2	71	19	21	45.6	.....
Flat Bush.....	2, 19	72	24	35	54.1	4.74	10	62	30	19	46.5	1.96
Newburgh.....	18	81	24	37	54.5	5.86						
Minaville.....	20	70	24	29	48.2	.....	5	71	30	10	37.6	.....
Gouverneur.....	21	74	24	28	46.6	3.09	10	64	18	5	.....	1.87
North Hammond..	18	75	23	29	47.0	5.08	9	62	19	7	35.0	3.17
South Trenton....	21	76	1	26	46.9	3.84	5	71	18	10	36.5	4.86
Cazenovia.....	20	83	8	28	49.5	.....	9	63	18	11	36.9	.....
Oncida.....	20	81	26	26	48.7	4.12	9	66	18	14	37.9	2.93
Houseville.....	20	80	1	30	48.2	3.80						
Depauville.....	21	75	1	29	49.4	3.94	9	59	19	8	36.4	2.31
Theresa.....					3.15	.....			18	1	.....	2.57
Oswego.....	17	75	4	33	49.3	1.28	9	61	30	16	39.5	1.67
Palermo.....	20	78	26	25	48.2	1.00	9	64	18	12	36.6	1.40
Nichols.....	19	81	27	24	49.2	.....	2	66	18, 30	14	39.9	.....
Geneva.....	20	80	8, 24	33	52.2	1.50	9	68	30	13	40.0	0.33
Rochester.....	19, 20	78	4, 8, 25, 26	32	51.0	1.92						
Rochester Univ'y..	19, 20	78	25	21	51.0	1.92	8	64	30	13	39.0	.....

Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

Sta es and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
NEW YORK—Con'd.		°		°	°	In.		°		°	°	In.
Little Genesee.....	20	80	26, 27	19	47.6	1.10	8	65	30	14	37.6	0.60
Suspension Bridge .	20	80	27	27	50.1	2.00	-----	-----	-----	-----	-----	-----
Buffalo.....	20	80	8	30	51.8	2.43	8	63	30	11	41.3	0.85
Averages.....	-----	-----	-----	-----	47.6	3.36	-----	-----	-----	-----	40.3	2.07
NEW JERSEY.												
Paterson .....	19	80	24	30	53.7	4.38	9	68	19	16	42.4	2.75
Newark .....	19	75	25	35	53.9	4.62	9	68	19	19	43.4	1.95
New Brunswick ...	19	79	25	33	54.2	4.18	2	68	19	19	42.7	1.68
Trenton.....	20	74	25, 27	40	57.7	3.96	9, 10	66	19	27	47.7	2.33
Burlington .....	19	79	25, 26	36	57.7	4.50	2	66	19	21	46.7	2.70
Moorestown .....	19	84	26	33	55.5	4.27	9	70	19	18	44.9	2.25
Mount Holly .....	19, 20	77	25	33	55.0	-----	9	71	19	21	46.1	-----
Seaville .....	19, 20	88	7, 8	36	56.6	4.60	2, 3, 9, 10, 11	68	20	26	46.3	2.61
Dover.....	19	78	24	29	52.4	4.60	10	63	19, 30	19	41.5	1.15
Haddonfield .....	19, 20	78	25	36	55.4	4.60	9	72	19	23	45.6	3.38
Greenwich .....	19	79	24, 25	37	55.8	2.37	9	72	19	19	46.8	1.24
Newfield .....	20	87	-----	-----	-----	-----	9	75	19	15	46.6	-----
Vineland .....	19	83	8, 25	32	55.0	3.73	9	77	19	16	45.7	1.49
Elwood .....	20	84	1, 24, 27	32	55.0	-----	9	72	19	14	45.4	-----
Averages.....	-----	-----	-----	-----	55.2	4.16	-----	-----	-----	-----	45.1	2.14
PENNSYLVANIA.												
Nyces .....	2	87	24	20	48.7	3.10	2	65	30	11	38.6	2.10
Fallsington .....	19	78	25, 26, 27	38	55.0	3.40	2	68	19	20	44.7	1.90
Philadelphia.....	19	80	8, 25	39	56.7	4.02	9	68	19	25	47.0	2.54
Germantown .....	19	82	24, 25	34	56.1	-----	10	63	19	14	49.9	-----
Horsham .....	19	80	24, 25, 26	34	54.1	5.75	-----	-----	-----	-----	-----	-----
Dyberry .....	19	80	24, 25, 26	22	47.8	-----	2, 8	64	30	12	37.2	1.30
Whitehall .....	18, 19	76	25, 26	28	52.1	-----	9	66	20	19	42.4	-----
Parkesville .....	20	81	25	33	55.3	2.70	9	70	30	22	45.2	1.67
Reading .....	18, 19	75	25	33	53.7	-----	9	71	30	23	45.4	-----
Ephrata .....	20	83	24, 26	36	57.8	2.72	9	72	30	22	47.2	0.57
Mount Joy .....	20	81	25	32	56.1	4.50	-----	-----	-----	-----	-----	-----
Harrisburg .....	19	76	25	37	55.2	3.14	2	66	30	24	44.4	0.89
Ickesburg .....	18, 19	85	25	26	52.7	4.93	2	71	20	17	42.9	1.33
Lewisburg .....	18	78	24	27	50.4	2.78	-----	-----	-----	-----	-----	-----
East Tioga .....	19	84	25	20	49.7	2.65	-----	-----	-----	-----	-----	-----
Pennsville .....	20	77	24, 25, 26	22	46.7	2.89	-----	-----	-----	-----	-----	-----
Franklin .....	19, 20	81	26	24	49.9	-----	2, 8	66	30	14	40.6	-----
Connellsville .....	2	80	24	26	51.6	-----	8	69	30	10	43.1	-----
Beaver Seminary..	17	78	25	30	53.1	2.48	2	65	30	19	43.2	1.40
New Castle.....	19, 20	81	1, 24	32	54.5	-----	2	68	30	20	45.8	-----
Canonsburg .....	19	89	24, 25	24	52.1	2.85	-----	-----	-----	-----	-----	-----
Averages.....	-----	-----	-----	-----	52.8	3.42	-----	-----	-----	-----	43.8	1.52
MARYLAND.												
Woodlawn .....	19, 20	85	8	38	-----	-----	2	72	19	17	45.8	2.32
Catonsville .....	19	78	24	36	55.1	-----	10	70	30	24	45.2	-----



Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

States and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
MARYLAND—Con'd.		°		°	°	In.		°		°	°	In.
Annapolis.....	18, 19	78	25	36	57.5	5.52	9	71	19	24	48.4	2.37
Emmitsburg.....	19	88	25	24	55.7	.....	2, 8	72	30	18	44.9	.....
Mt. St. Mary's Col..	19	77	25	35	53.7	5.39	2	67	30	18	43.3	1.18
Averages.....					55.5	5.46					45.5	1.96
VIRGINIA.												
Cape Charles L. H..	19	83	24	46	64.0	2.62	2	74	30	24	52.5	2.78
Surry C. H.....	3	89	31	40	60.5	.....	9	80	30	26	52.3	.....
Lynchburg.....	3	77	25, 31	36	57.8	.....	2, 8, 10	66	30	27	51.4	.....
Comorn.....					4.67	.....					1.28	.....
Snowville.....	3	83	25	16	49.5	15.88	3	70	30	12	42.6	2.75
Averages.....					58.0	7.72					49.7	2.27
WEST VIRGINIA.												
Romney.....	2, 19	86	24, 25	30	56.2	.....	8	78	30	20	47.5	.....
Grafton.....	2	88	24, 25	32	57.5	4.80	8	75	30	16	47.9	1.50
Cabell C. H.....	19, 20	78	24	34	55.3	3.70	9	68	30	19	46.5	1.60
Averages.....					56.3	4.25					47.3	1.55
NORTH CAROLINA.												
Goldsboro'.....	3	90	29	40	61.5	4.75	3, 10	82	6	31	55.3	2.15
Oxford.....	3	81	24, 25	38	59.1	6.80	2, 3, 9	70	13, 20	30	50.3	2.50
Raleigh.....	3	89	24	38	57.8	4.50	3	74	30	25	48.1	2.70
Albemarle.....	3	89	8	35	57.6	8.58	3	80	6	22	51.4	1.92
Statesville.....	3	84	25	28	53.4	4.63						.....
Asheville.....	3	81	31	31	54.0	.....	3	72	30	17	47.8	.....
Averages.....					57.2	5.85					50.6	2.32
SOUTH CAROLINA.												
Aiken.....	3	85	31	42	61.3	4.27	2	75	13	32	56.9	2.61
Gowdysville.....	3	83	31	38	59.6	.....	2	72	6, 13, 30	31	53.9	.....
Averages.....					60.5	4.27					55.4	2.61
ALABAMA.												
Moulton.....	2	82	13	41	59.7	1.41						.....
Carlowville.....	1	88	31	43	64.3	2.87						.....
Fish River.....	17	88	30	48	69.4	1.45	23	92	30	31	60.9	2.59
Opelika.....	1	83	31	44	64.6	.....	2	75	30	28	52.8	.....
Greene Spring.....	2	90	31	45	64.6	1.38	8	77	30	28	56.2	3.83
Prairie Bluff.....	21, 22	86	31	40	68.8	.....						.....
Averages.....					65.2	1.78					56.6	3.21
FLORIDA.												
Jacksonville.....	2, 12	82	31	52	73.9	4.70	4	85	13, 30	42	64.2	0.40
Port Orange.....	1, 3	85	30, 31	58	75.3	.....						.....
Gordon.....							9	84	13	38	64.0	.....
Averages.....					74.6	4.70					64.1	0.40

Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

States and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
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<b>TEXAS.</b>												
Columbia.....	1, 3, 4, 5	92	31	48	72.2	9.06	-----	-----	-----	-----	-----	-----
Waco.....	4	94	30	43	70.3	2.10	8	82	30	24	58.2	1.10
Austin.....	4	96	31	45	71.6	2.08	9	83	30	28	59.4	2.98
Gilmer.....	14, 21	87	31	34	65.0	-----	-----	-----	-----	-----	-----	-----
Averages.....	-----	-----	-----	-----	69.8	4.41	-----	-----	-----	-----	55.8	2.04
<b>LOUISIANA.</b>												
Benton.....	3	86	31	38	67.8	-----	2	76	30	28	57.3	-----
New Orleans.....	-----	-----	-----	-----	-----	-----	27	78	30	42	-----	-----
<b>MISSISSIPPI.</b>												
Grenada.....	2	90	31	33	66.1	-----	14	80	30	24	61.8	-----
Fayette.....	2	80	31	28	59.5	-----	-----	-----	-----	-----	-----	-----
Nachez.....	2	85	31	42	68.3	0.70	3	76	30	30	57.9	5.53
Averages.....	-----	-----	-----	-----	64.6	0.70	-----	-----	-----	-----	59.9	5.53
<b>TENNESSEE.</b>												
Tusculum College..	4	80	31	33	55.8	-----	-----	-----	-----	-----	-----	-----
Lookout Mountain..	3	88	31	34	62.5	-----	2, 3	74	30	12	52.6	-----
Clarksville.....	2, 3	87	31	33	69.6	1.98	2	75	30	15	49.6	5.94
Franklin.....	3	89	31	31	61.5	-----	2	80	29	16	50.7	-----
Memphis.....	3	88	31	33	61.9	1.89	2	77	30	18	53.0	3.59
Nashville.....	-----	-----	-----	-----	-----	-----	8	71	30	18	48.2	-----
Averages.....	-----	-----	-----	-----	62.3	1.94	-----	-----	-----	-----	50.8	4.77
<b>KENTUCKY.</b>												
Chilesburg.....	2	88	24	34	54.4	0.78	2, 8	72	30	10	46.5	3.01
Louisville.....	2	89	24	28	57.0	0.74	8	75	30	11	47.7	4.56
Danville.....	3	90	24	36	60.4	0.70	-----	-----	-----	-----	-----	-----
Averages.....	-----	-----	-----	-----	57.3	0.74	-----	-----	-----	-----	47.1	3.54
<b>OHIO.</b>												
New Lisbon.....	19, 20, 21	80	25	25	51.6	2.74	-----	-----	-----	-----	-----	-----
Steubenville.....	-----	-----	-----	-----	-----	-----	8	70	30	20	44.7	1.23
Painesville.....	19	79	31	35	53.0	4.50	3	65	30	14	43.3	2.43
Milnersville.....	18	82	24	22	50.0	2.33	-----	-----	-----	-----	-----	-----
Cleveland.....	19	81	24	32	53.6	3.56	-----	-----	-----	-----	-----	-----
Wooster.....	19	86	24	29	54.2	-----	8	68	30	13	43.9	-----
Kelley's island.....	20	78	23	38	56.7	1.68	8	66	30	17	44.9	1.31
Norwalk.....	19, 20	82	24	28	53.9	1.63	8, 25	67	30	14	44.2	1.20
Greenwich.....	20	86	30	32	56.0	2.26	8	68	30	7	45.7	2.18
North Fairfield....	18	84	24, 30	30	54.1	1.65	1	72	30	12	44.9	1.75
Marion.....	18, 19	78	24	26	52.0	2.56	8	76	30	12	41.7	2.87
Williamsport.....	27	76	7	29	47.3	4.26	2	76	30	20	43.7	4.11
Toledo.....	19, 20	78	24	30	53.6	2.88	8	65	30	13	43.4	2.00
Bowling Green....	18	89	24	22	53.9	2.30	8	69	30	13	44.0	2.71
Kenton.....	19	86	24	39	57.9	6.25	2	70	30	28	49.0	5.91
Urbana University..	18, 19	80	24	30	54.7	2.01	2	71	30	8	45.1	2.14
Hillsboro'.....	2	80	30	33	54.0	3.07	8	68	30	10	44.7	2.7

Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

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	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
<b>OHIO—Cont'd.</b>												
Bethel .....	2	85	24	32	50.8	In. 2.25	8	71	30	8	42.8	In. 2.50
Cincinnati .....	2, 18	81	30	44	60.4	3.10	.....	.....	.....	.....	.....	.....
College Hill .....	2	87	30	35	57.2	1.63	3	70	30	8	46.5	3.63
Averages .....	.....	.....	.....	.....	53.9	2.81	.....	.....	.....	.....	44.5	2.59
<b>MICHIGAN.</b>												
Monroe City .....	18	86	23	36	55.9	1.87	8	72	30	10	43.3	1.50
State Agric. College	19	79	24	22	50.7	2.11	8	66	30	7	40.4	1.77
Litchfield .....	19	82	24	31	52.5	3.89	1, 3, 8	64	30	6	40.5	3.30
Grand Rapids .....	19	84	23, 24	28	52.8	.....	1, 8	64	30	10	41.5	.....
Northport .....	20	80	23	32	51.6	.....	8	66	30	10	39.7	.....
Otsego .....	20	84	23	32	54.0	.....	.....	.....	.....	.....	.....	.....
Holland .....	.....	.....	.....	.....	.....	.....	1	78	30	12	44.1	3.14
Copper Falls .....	20	75	3, 19, 22	32	45.5	2.60	.....	.....	.....	.....	.....	.....
Ontonagan .....	20	76	3, 4, 22	32	47.2	.....	.....	.....	.....	.....	.....	.....
Averages .....	.....	.....	.....	.....	50.0	3.62	.....	.....	.....	.....	41.6	2.43
<b>INDIANA.</b>												
Richmond .....	2, 18	78	24	30	52.0	2.72	.....	.....	.....	.....	.....	.....
Aurora .....	2	84	24	32	53.8	2.01	8	73	30	8	43.7	3.40
Vevay .....	2, 20	90	24	28	57.9	1.64	8	77	30	10	47.0	3.50
Muncie .....	2	82	24	31	54.4	2.85	2, 8	70	30	5	44.0	.....
Spiceland .....	2	82	23	32	54.1	2.70	2	71	30	4	43.9	2.35
Columbia City .....	17, 18	80	24	26	49.5	0.48	8	66	30	5	40.0	3.38
Indianapolis .....	1	82	30	30	53.4	2.61	.....	.....	.....	.....	.....	.....
Merom .....	2	82	31	31	54.8	2.10	2, 8	68	30	3	46.0	2.55
New Harmony .....	2	85	30	34	50.7	0.81	2	73	29, 30	11	48.3	3.13
Averages .....	.....	.....	.....	.....	53.4	1.99	.....	.....	.....	.....	44.7	3.05
<b>ILLINOIS.</b>												
Chicago, (B) .....	19	90	30	32	57.8	.....	1	73	30	0	43.1	.....
Do.... (L) .....	19	81	30	35	56.8	1.28	1	69	30	6	44.8	1.89
Golconda .....	3, 20	89	30	28	55.9	0.90	4	72	30	10	45.4	3.20
Aurora .....	19	82	24	26	52.4	1.21	1	68	30	1	39.3	2.17
Sandwich .....	18	80	24	24	51.4	0.44	.....	.....	.....	.....	.....	.....
Ottawa .....	19	87	23, 24	34	54.5	0.92	1	74	29	9	42.1	1.12
Winnebago .....	19	84	23, 30	27	52.4	0.50	1	68	30	— 2	40.1	1.68
Hennepin .....	19, 20	85	24	28	56.0	.....	1	70	30	4	43.0	.....
Rochelle .....	18, 19, 20	81	23	25	51.0	.....	1	70	30	— 3	39.0	.....
Wyanet .....	18	85	24	28	55.1	0.97	1	72	30	4	43.9	2.40
Tiskilwa .....	18, 19	80	24	28	52.1	.....	1	70	30	3	42.1	.....
Elmira .....	18, 19	83	23, 24	31	52.9	0.92	.....	.....	.....	.....	.....	.....
Peoria .....	19	84	24	30	55.3	1.10	1	72	30	3	44.6	1.93
Springfield .....	18	84	24	26	56.2	.....	2	80	30	2	46.7	.....
Loami .....	18	86	24	28	55.6	2.00	.....	.....	.....	.....	.....	.....
Waterloo .....	2	94	30	35	61.6	.....	2	76	30	10	50.5	.....
Dubois .....	18	84	31	26	58.5	1.20	2	74	30	— 1	46.3	2.30
Galesburg .....	19	82	29, 30	32	53.1	0.95	1	69	30	2	42.6	1.45
Manchester .....	18, 19	87	28, 29	32	57.6	1.42	.....	.....	.....	.....	.....	.....

Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

States and places.	OCTOBER, 1867.						NOVEMBER, 1867					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
ILLINOIS—Cont'd.		°		°	°	In.		°		°	°	In.
Mount Sterling .....	16, 18, 19	83	29	32	57.2	.....	1	75	30	— 1	45.4	.....
Andalusia .....	18	80	23	32	55.4	.....	1	68	30	— 6	44.2	.....
Augusta .....	18	80	29	34	56.5	0.99	2	70	30	—12	46.1	1.33
Averages .....					55.2	1.06					43.9	1.95
WISCONSIN.												
Manitowoc .....	16	77	23, 29, 31	34	50.6	1.74	8	62	30	— 3	38.9	1.88
Plymouth .....	18	77	24	29	48.1	2.10	1, 8	64	30	— 2	37.0	3.50
Milwaukee .....	16, 19	80	29, 30	38	52.1	0.80	1	67	30	1	40.8	1.53
Appleton .....	17	80	30	38	58.0	.....	17	72	30	— 6	40.1	.....
Geneva .....	19	80	23	28	51.4	.....	1	67	30	0	40.1	.....
Delavan .....	18, 19	79	23	26	51.0	0.73	1	65	30	— 4	39.0	1.74
Waupaca .....	20	76	23	30	50.1	.....						
Embarrass .....	20	78	23	26	47.5	1.62	8	58	30	— 8	34.7	2.00
Edgerton .....	19, 20	82	23	26	50.7	1.50	1, 8	66	30	— 5	39.7	1.90
Baraboo .....	16	80	30, 31	30	52.2	3.00	1	65	30	— 2	40.9	3.84
New Lisbon .....	18, 20	80	22	30	50.5	.....	22	75	30	— 8	37.3	.....
Averages .....					51.1	1.64					38.9	2.34
MINNESOTA.												
St. Paul .....	15	73	31	27	47.3	2.02	1	65	30	— 6	34.1	0.58
Minneapolis .....	15	72	26, 31	28	47.9	0.92	1	63	30	— 6	34.2	0.68
Sibley .....	19	78	31	18	48.5	0.35						
New Uln .....	15, 19	78	31	25	51.0	0.99	1	68	30	— 8	37.4	0.13
Averages .....					48.7	1.07					35.2	0.46
IOWA.												
Clinton .....	15, 19, 20	86	30	30	56.2	0.96						
Davenport .....	18, 19	79	29	34	53.1	1.56	1	67	30	3	41.7	4.42
Dubuque .....	19	76	30	28	51.9	1.32	1	64	30	.....	40.2	1.38
Monticello .....	19	79	31	24	51.2	1.15	1	68	30	3	37.3	0.90
Fort Madison .....	18	81	23, 31	32	55.1	1.30	1	68	30	— 1	43.8	1.72
Guttenberg .....	19	82	23	20	49.6	.....	1, 13	68	30	— 3	37.9	.....
Ceres .....	20	82	30, 31	28	53.2	.....	7, 13	66	29	2	40.5	.....
Mount Vernon .....	19	79	30, 31	31	54.2	.....	1	76	30	— 1	40.2	.....
Iowa City .....	18	80	13	32	54.5	2.06	1	72	30	.....	41.6	1.97
Independence .....	1, 19	80	31	23	50.4	2.70	1	70	30	— 7	37.4	0.30
Do .....	18	81	30	21	51.1	2.00	1	69	30	— 3	37.6	0.20
Waterloo .....	19	80	31	26	57.0	.....	1, 13, 15, 21	68	30	.....	39.7	.....
Marble Rock .....	19	74	31	26	52.1	.....	1	69	30	— 6	40.6	.....
Algona .....	18	80	23	25	49.5	.....						
Do... (Dr. W.) .....	19	80	31	24	50.6	.....	1	62	30	—10	30.4	1.05
Dakota .....	18, 19	79	23, 31	27	50.2	.....						
Fontanelle .....	1	81	31	29	52.2	3.00						
Logan .....	7	88	23, 30	23	60.0	2.92	1, 7, 13, 22, 23	70	29, 30	3	41.5	0.10



Table showing the range of the thermometer, &amp;c., for Oct. and Nov.—Cont'd.

States and places.	OCTOBER, 1867.						NOVEMBER, 1867.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain and melt'd snow.
<b>IOWA—Cont'd.</b>												
Fort Dodge.....	18, 19	77	23	29	51.3	1.67	1	70	30	— 1	39.2	0.02
Boonsboro'.....	.....	.....	.....	.....	.....	.....	7	71	30	2	39.6	.....
Averages.....	.....	.....	.....	.....	52.8	1.88	.....	.....	.....	.....	39.4	1.21
<b>MISSOURI.</b>												
St. Louis University	2	89	30, 31	37	58.3	1.40	2	73	30	11	49.0	2.09
Allenton.....	2	100	31	24	56.1	1.54	2	84	30	— 5	45.0	2.24
Hermitage.....	2	93	29	28	58.0	2.32	2	80	30	— 8	45.5	1.63
Rolla.....	2	92	31	23	55.4	1.50	2	80	30	— 9	44.0	2.08
Harrisonville.....	1	84	30	30	56.4	1.74	2	76	30	8	46.1	0.86
Oregon.....	1	91	30	31	56.8	2.10	1	77	30	3	46.0	0.40
Averages.....	.....	.....	.....	.....	56.8	1.77	.....	.....	.....	.....	45.9	1.22
<b>KANSAS.</b>												
Olatha.....	1	89	30	26	55.6	2.09	.....	.....	.....	.....	.....	.....
Atchison.....	1	90	30	29	56.7	0.70	1, 7	76	30	4	43.0	0.13
Holton.....	1	94	30	28	54.2	.....	.....	.....	.....	.....	.....	.....
State Agric. College	1	92	30	29	57.5	0.91	.....	.....	.....	.....	.....	.....
Council Grove.....	1	93	30	24	53.1	0.05	1, 7	78	29	7	45.4	1.30
Baxter Springs....	2	98	30	18	63.3	0.26	2	87	30	2	50.5	2.30
Averages.....	.....	.....	.....	.....	57.6	0.78	.....	.....	.....	.....	44.7	1.24
<b>NEBRASKA.</b>												
Elkhorn.....	19	87	30	26	52.9	.....	7	76	29	1	40.9	0.05
De Soto.....	1	86	30	27	52.5	1.07	7	73	29	5	40.0	0.03
Glendale.....	16	87	22, 23	22	52.2	1.05	1	78	29	— 7	38.9	0.05
Dacota.....	19	82	30	28	52.0	.....	13	72	29	5	39.7	.....
Averages.....	.....	.....	.....	.....	52.4	1.06	.....	.....	.....	.....	39.9	0.04
<b>UTAH TERRITORY.</b>												
Gt. Salt Lake City	14	78	30, 31	34	56.4	1.41	.....	.....	.....	.....	.....	.....
Wanship.....	7	86	10	26	50.1	.....	.....	.....	.....	.....	.....	.....
Averages.....	.....	.....	.....	.....	53.3	1.41	.....	.....	.....	.....	.....	.....
<b>CALIFORNIA.</b>												
Monterey.....	11	84	24	37	56.2	0.71	.....	.....	.....	.....	.....	.....
<b>OREGON.</b>												
Corvallis.....	11, 13	72	22	24	.....	.....	.....	.....	.....	.....	.....	.....
<b>WASHINGTON TER.</b>												
Port Townsend....	10	64	27	32	49.0	0.58	.....	.....	.....	.....	.....	.....

## NOTES OF THE WEATHER.—OCTOBER, 1867.

FROM THE SMITHSONIAN INSTITUTION.

*Cornish, Maine.*—Mean temperature of October  $2.23^{\circ}$  above the average of the month for thirty-five years.

*Standish, Maine.*—October 22.—Thunder shower in the evening.

*Lisbon, Maine.*—October 29, 30.—Quite a severe northeast storm of rain.

*Steuben, Maine.*—October 6.—Severe storm last night; two and a half inches of rain fell, the most of it in about an hour. 30th, 31st.—Two inches and two-tenths of rain fell the last two days of the month.

*Claremont, N. H.*—October 1.—The first real freeze of the season occurred to-day. 22d.—A smart shower of hail from  $4\frac{1}{2}$  to 5 p. m., with two or three claps of thunder.

*North Barnstead, N. H.*—October 1.—Ice one-fourth of an inch thick.

*Georgetown, Mass.*—October 15.—A heavy white frost here, and ice on lower ground; thunder and lightning in the afternoon and evening at the south and southeast. 29th, 30th, heavy rain; blowing a gale in the evening and night of the 29th.

*Newport, R. I.*—October 15.—Thunder shower from 7 to 8 p. m. 24th, first white frost.

*Groton, Conn.*—Two and a quarter inches of rain fell on the 29th and 30th.

*Colebrook, Conn.*—October 1.—Ground slightly frozen this morning.

*Depauville, N. Y.*—October 5.—Between 4 and 5 a. m. a thunder storm from the northeast, with a copious rain, the latter lasting all day. 18th.—The ground is very dry. 21st.—The warm weather seems to stop the wild geese in their flight to the south for a while, as they are moving to-day in large flocks to the northwest again.

*Palermo, N. Y.*—Only one inch of rain fell during the month, half of it on the 5th, and half on the 10th and 11th. Wells and springs here that never before failed are now (31st) dry.

*Rochester, N. Y.*—October 1.—Quite a hard frost this morning, killing the tomato vines in some localities. 4th, a severe thunder storm very early in the morning. 31st, a few flakes of snow fell between 7 and 8 p. m. The mean temperature of the month was  $2.54^{\circ}$  above the general average for October.

*Elwood, N. J.*—October 1.—Ice formed as thick as window glass this morning. Until the 24th tomato vines were green, and the fruit ripening.

*Trenton, N. J.*—October 31.—Snow squall at 3 p. m., the first of the season.

*Newark, N. J.*—The mean temperature of the month was more than a degree above the average of October for twenty-five years. There were two heavy falls of rain, on the 5th and 29th, the first depositing more than an inch and a half, and the last nearly two inches and a fifth. The storm of the 29th was very violent, the rain descending at times in almost unbroken sheets, and the wind blowing a gale from the northeast. On the 11th a rain occurred between 7 and 9 p. m., accompanied with very heavy thunder and vivid lightning. The rain of the month was nearly an inch above the average.

*Philadelphia, Penn.*—October 31.—Hoarfrost first observed on the morning of the 25th. The barometer was higher on the 24th than ever before seen by the observer in October.

*Newcastle, Penn.*—October 31.—The first snow, half an inch, fell on the night of the 30th.

*Ephrata, Penn.*—October 1.—Heavy frost this morning. 24th.—First ice of the season this morning, a quarter of an inch thick on standing water.

*Perrysville, Penn.*—October 1.—Vegetation mostly killed by the frost this morning.

*Emmitsburg, Md.*—October 1.—Heavy frost, destroying vines. 5th, exceed-

ingly heavy rain from 5 a. m. to 8 a. m. 28th, rain began at 2 a. m. and continued until 8 p. m. of the 29th; waters very high.

*Snowville, Va.*—October 1.—First frost, heavy. 30th, sprinkle of snow, with sleet at 9 p. m., very slight.

*Surry C. H., Va.*—October 1.—First frost. 3d, diffuse lightning with rolling thunder in the northwest; a storm at night. 10th, some thunder at 1 p. m. 27th to 29th, heavy rain; wind in the beginning of the storm from the east, at the end from the northwest. 31st, snow from 6½ to 9 a. m.

*Romney, West Va.*—October 1.—First frost. 31st, snow two inches; first of the season.

*Grafton, West Va.*—October 25.—First ice. Rain from the 27th to the 31st.

*Attway Hill, N. C.*—October 1.—First white frost; very light. Six inches of rain fell from the 26th to the 28th.

*Moulton, Ala.*—October 29.—Herbage not killed by frost until this morning, though frosts in the low grounds were reported as early as the 7th.

*Fayette, Miss.*—The only rain during the month was on the 26th, when it fell gently all day and the most of the night. The first white frost was on the 31st, but so light that no tender vegetation was injured.

*Columbia, Texas.*—October 3.—Strong gale of wind from the north during the night, with high wind and sudden squalls through the day. 9th, first flock of wild geese arrived. The month has been marked by severe hurricanes at Galveston on the 3d, and on the Rio Grande on the 6th and 7th.

*Clarksville, Tenn.*—October 3.—Flashes of very distant lightning at the south after dark. 4th, three-quarters of an inch of rain to-day. 25th, rain from 3 a. m. this morning till 1 a. m. of the 26th. The first killing frost was on the 31st.

*Memphis, Tenn.*—October 13.—Very light frost. 31st, a sharp frost this morning.

*Chilesburg, Ky.*—October 1.—A white frost this morning, 24th, a heavy frost, killing tender vegetables in bottoms.

*Toledo, Ohio.*—October 14.—Three inches of snow fell to-day; the deepest fall of snow on record in this vicinity in the month of October."

*Painesville, Ohio.*—October 1.—First frost, but nothing injured.

*Lisbon, Ohio.*—October 1.—Hard frost; ice as thick as window glass. 5th, thunder storm last night. 30th, two inches of snow.

*Kelley's Island, Ohio.*—October 1.—Frost reported in the interior of the island, but none near the lake; thermometer at daylight 45°. 2d, thunder at the west and northwest at 7 a. m. 24th, light hoar frost, the first of the season.

*Ripley, Ohio.*—October 30.—Four and a half inches of snow fell to-day.

*Kenton, Ohio.*—October 4.—Thunder showers from the northwest at 7 p. m.; lightning zigzag and forked.

*Williamsport, Ohio.*—October 1.—Severe thunder storm from 1 p. m. to 11½ p. m. from the northwest. 7th, a frost this morning which cut down all vegetables in exposed situations; sorghum was slightly injured, but imphee in the same situations was uninjured.

*Northfield, Ohio.*—October 30.—Commenced snowing at 2 p. m., and at 9 it was nearly six inches deep. It broke down a good many trees.

*Litchfield, Michigan.*—October 30.—Rain from 4 to 7 a. m., then snow till 11 p. m. Three inches of snow fell, and was very wet, being half water. 31st, the month has been warm and dry; streams very low; the St. Joseph's river at this point is lower than the observer has known it for the last eighteen years.

*Central Mine, Michigan.*—October 22.—One inch of snow fell to-day.

*New Harmony, Indiana.*—The rain-fall for August, September, and October

was  $2\frac{1}{4}$  inches; the amount in the corresponding months during the last fifteen years varied from 6 to 12 inches.

*Aurora, Indiana.*—October 1.—First frost observed.

*Richmond, Indiana.*—October 4.—A severe thunder storm, attended with a heavy gale from the northwest. It tore down considerable timber a little southwest of here.

*Columbia City, Indiana.*—An inch of snow fell on the 30th and 31st.

*Merom, Indiana.*—October 1.—Frost, the first of the season.

*Augusta, Ill.*—October 30.—First snow; just covered the ground.

*Ottawa, Ill.*—October 23.—Ice formed a fourth of an inch, the first this autumn.

*St. Louis, Mo.*—October 1.—First white frost on bottom lands. 3d and 4th, thunder and lightning in the afternoon. 23d, heavy white frost.

*Rolla, Mo.*—October 30.—Ice formed for the first time. Not rain enough during the month at any time to wet the ground more than three inches deep.

*Harrisonville, Mo.*—October 12.—First light frost this morning.

*Plymouth, Wis.*—Thunder showers on the 17th and 19th. First snow in the evening of the 29th.

*Manitowoc, Wis.*—October 29th.—First snow this night. 31st.—This October was the warmest in seventeen years, except 1854, when the mean temperature was  $52.33^{\circ}$ .

*Milwaukee, Wis.*—The quantity of rain since June 1 is only 8.91 inches, which is only about half the average of the same period for twenty-four years.

*New Ulm, Minn.*—October 22.—Ice an eighth of an inch thick.

*St. Paul, Minn.*—October 12.—First ice formed.

*Sibley, Minn.*—October 29.—An inch of snow.

*Fort Madison, Iowa.*—October has been extremely dry; wells are drying up; pastures are dried up; farmers are digging wells deeper for water; three-quarters of an inch of snow on the morning of the 30th.

*Algona, Iowa.*—October 12.—This morning the ground is white with frost. 29th, one inch of snow.

*Iowa City, Iowa.*—October 6.—First frost, very light; no damage. 23d, first killing frost. 29th, first snow, one-tenth of an inch.

*Manhattan, Kansas.*—October 12.—Frost on low ground.

*Atchison, Kansas.*—October 5.—The ground covered with white frost this morning; but little damage done to growing crops. 12th.—Very heavy frost this morning. 20th, thunder, lightning, and heavy wind and rain-storm from the northwest at 6 p. m.

*De Soto, Nebraska.*—October 2.—Wild geese and brants flying south. 12th, first frost; tomato vines, &c., killed. Thermometer  $30^{\circ}$  at daybreak.

*Dakota City, Nebraska.*—October 12.—First frost, sufficient to kill vines.

*Richland, Nebraska.*—October 5.—Heavy white frost.

*Wanship, Utah.*—October 8.—Snow three inches deep.

## NOVEMBER, 1867.

Many of the registers north, south, and west, contain notices of "hazy," "smoky," and "Indian summer" weather, beginning about the middle of November and continuing from a week to ten days.

*Gardiner, Maine.*—The mean temperature of November was a degree and two-thirds below the average of the month for thirty-one years, and the amount of rain an inch and two-thirds less than the average for twenty-nine years. Seven and a half inches of snow fell during the month. There was good sleighing eight days, and the river was frozen six days.

*Corinth, Maine.*—November 16.—Five inches of snow fell to-day.

*Stratford, N. H.*—Sixteen inches of snow fell during the month, five inches



of it on the 16th. This has been the coldest November for ten years, which is as far back as the observer has the means of comparing. On the 22d to the 25th, and on the 28th, there was no wind at all, which was very remarkable for this mountainous region.

*Shelburne, N. H.*—November 12.—No frost in the ground. 16th, first sleighs out. 18th, Androscoggin closed. 19th, teams cross on the ice.

*Lunenburg, Vt.*—One inch of snow on the 16th; five inches during the month. Connecticut river frozen over on the 20th.

*Craftsbury, Vt.*—Four inches of snow on the 16th; eleven and two-thirds inches during the month. Good sleighing from the 16th to the 24th.

*Kingston, Mass.*—November 13.—A quarter of an inch of snow to-day, the first of the season, and no more during the month. 16th, sharp lightning and heavy thunder at noon; rain from 10 a. m. to 1 p. m. 19th, skating; small ponds frozen over.

*Mendon, Mass.*—November 19th (mean temperature  $15^{\circ}$ ) was the coldest day so early in November for thirty-four years, and was the coldest day in November during that period, except November 30, 1835, November 25, 1838, November 28, 1844, and November 30, 1847.

*New Bedford, Mass.*—November 16.—A flash of lightning with thunder about one-half p. m.; a building destroyed in a neighboring town. 18th, three-fourths of an inch of snow; this was all that fell during the month.

*Newport, R. I.*—About four inches of snow fell on the 12th. This was the first snow of the season, and the only one in November.

*Middletown, Conn.*—November 12.—The storm this morning began with a moderate rain about 8 o'clock. This afternoon changed to snow, which fell very fast and continued until near midnight. When the snow began the ground was entirely free from frost and comparatively warm, so that much snow must have melted, but still, on the morning of the 13th, that which remained was a foot in depth. There has not been so severe a storm here so early in the season since 1841, when there was a storm quite similar to this, on the 3d and 4th of October. At that time the snow was about a foot deep, and then, as now, there was much less snow both north and south of this place.

*Troy, N. Y.*—Three-tenths of an inch of snow fell during the month—one-tenth on the 17th, and two tenths on the 20th.

*New York, N. Y.*—November 12.—Snow from 9.45 a. m. to 12.10 p. m.; melted as fast as it fell. 13th, the first ice.

*Buffalo, N. Y.*—Half an inch of snow fell on the 13th, the first to whiten the earth this season. The average fall of rain for the past nine years, for the six months ending November 30, has been twenty and two-tenths inches; this year it was only ten inches. Wells, cisterns, and small streams are drying up, and great inconvenience is met with by farmers in some localities in procuring water for stock.

*Depauville, N. Y.*—November 30.—Mean temperature of to-day  $10\frac{2}{3}^{\circ}$ . This is the coldest day in November within the recollection of the observer, thirty-six years.

*Newark, N. J.*—The mean temperature of the month was the same as the average of November for twenty-four years. The quantity of water was unusually small, being nearly two inches below the average, and only twice in twenty-four years, 1850 and 1857, has so small a quantity fallen in November. On the 12th some snow was mingled with the rain, melting as it fell.

*Greenwich, N. J.*—The earth whitened with snow on the 30th, the only time during the month.

*Paterson, N. J.*—An inch of snow on the 30th.

*Philadelphia, Penn.*—November 13.—Ice formed in the suburbs of the city; in the afternoon a light snow. 14th, first ice observed in the streets.

*Pocopson, Penn.*—One-tenth of an inch of snow on the 30th.

*Reading, Penn.*—Enough snow to whiten the ground on the 13th and 30th.

*Avondale, Penn.*—Slight snow on the 12th, 13th, and 30th.

*Blooming Grove, Penn.*—November 11.—Thunder storm from 7 to 8 p. m. 12th, a little snow in the afternoon and towards night.

*Franklin, Penn.*—November 12.—Four inches of snow. 14th, snow all gone. 30th, six and five-eighths inches of snow fell during the month. It continues very dry; farmers in adjoining county are killing their cattle for want of water.

*New Casile, Penn.*—November 30.—Another unusually dry month; very little rain has fallen since the 7th of August; streams are very low, and numerous springs and wells are dry. Four inches of snow fell early this morning.

*Beaver, Penn.*—November 12.—The ground was covered with snow in the morning, but it disappeared in the forenoon. 26th, during the night rain set in and continued at intervals till the night of the 29th, when a violent snow storm came on from the northwest, and two inches of snow fell.

*Emmitsburg, Md.*—Snow only on the 12th and 30th, both very light.

*Woodlawn, Md.*—November 30.—Squalls of snow.

*Catonsville, Md.*—November 19.—Ice first formed.

*Cape Charles light-house, Va.*—Violent gale from the northwest on the 29th and 30th.

*Surry Court-house, Va.*—November 6.—Great white frost, first ice of the season.

*Romney, West Va.*—November 30.—Very high wind all day from the west with slight sprinkle of snow, enough to cover the ground.

*Grafton, West Va.*—Snow twice during the month, half an inch on the 12th, and half an inch on the 30th.

*Attaway Hill, N. C.*—November 10.—A storm from the southwest, with thunder and lightning.

*Wilkinsville, S. C.*—November 5.—Killing frost and ice. 12th, ground frozen half an inch in exposed places.

*Jacksonville, Fla.*—November 30.—The first and only frost of the season thus far was on the 13th of this month. The mean temperature of the month was two and seven-tenths degrees above the average for fifteen years. The amount of rain was two inches and sixty-seven hundredths less than the average.

*Greene Springs, Ala.*—November 5.—Second heavy frost this autumn.

*Grenada, Miss.*—The entire month has been remarkable for its mild, beautiful, Indian summer weather. There were frosts on nine mornings; those on the 5th, 6th, and 30th heavy; a hard freeze accompanying the latter.

*New Orleans, La.*—November 5.—At daybreak a very slight, barely perceptible frost. 8th, the Mississippi river has been at its lowest stage for several weeks. The water is as clear as lake water, and when the atmosphere is clear it assumes a beautiful pea green color. There is no perceptible current. 17th, fires in the mornings and evenings are desirable. 18th, the Mississippi rather falling than rising. 30th, ice was seen in still water on the levee early this morning.

*Waco, Texas.*—November 6.—First frost this morning.

*Austin, Texas.*—November 30.—First general and killing frost.

*Memphis, Tenn.*—November 5.—A sharp frost this morning. 30th, ice in street five-eighths of an inch thick.

*Chilesburg, Ky.*—November 1.—A general frost, the first this autumn.

*Kenton, Ohio.*—On the night of the 10th and 11th was the first snow of the season to remain on the ground, but not enough to measure. Three-quarters of an inch of snow on the 30th.

*North Fairfield, Ohio.*—Half an inch of snow on the 11th, and four inches on the 30th.

*Painesville, Ohio.*—An inch and three-quarters of snow on the 11th, and an

inch and a quarter on the 29th. This has been the driest and warmest November within recollection.

*Urbana, Ohio.*—The mean temperature of November was 5.24 degrees above the average of the month for fifteen years, and the quantity of rain and snow less than two-thirds of the average.

*Monroe, Mich.*—A quarter of an inch of snow on the 30th, the only snow mentioned during the month.

*Holland, Mich.*—Four inches of snow on the 29th and 30th.

*Merom, Indiana.*—November 3.—At 2.10 p. m. a fearful storm of wind and rain burst from the southwest, and continued twenty minutes.

*Muncie, Indiana.*—November 11.—One inch of snow. 29th, the weather remained remarkably mild and pleasant until this morning, when a cold rain began to fall and terminated in snow, a portion of which melted as it fell—depth less than an inch.

*Chicago, Ill.*—November 29.—Ground covered with snow this morning for the first time this season.

*Ottawa, Ill.*—November 23.—Hard thunder storm.

*Golconda, Ill.*—November 19.—Ohio river lowest stage this season. 29th, about one-third of an inch of snow.

*Dubois, Ill.*—November 29.—First snow to-day, four and a half inches.

*St. Louis, Mo.*—November 29.—The first snow of the season.

*Hermitage, Mo.*—November 28.—Snow, four inches, an unusual amount in this region.

*Harrisonville, Mo.*—Two and a quarter inches of snow on the 28th.

*Embarrass, Wis.*—Four inches of snow on the 29th.

*New Lisbon, Wis.*—Heavy thunder and lightning on the 22d and 23d.

*Milwaukee, Wis.*—November 30.—River closed with ice.

*New Ulm, Minn.*—November 28.—Minnesota river frozen over last night.

*Minneapolis, Minn.*—First ice forming in the Mississippi at this point, November 28; first skating on the river November 29. Two and a quarter inches of snow on the 3d, and half an inch on the 28th.

*Marble Rock, Iowa.*—November 26.—The river is lower than it has been before for seven years. 28th, snow blowing a little all day, but scarcely enough to whiten the ground; the only snow during the month.

*Moulton, Iowa.*—November 23.—First rain since October 8.

*Iowa City, Iowa.*—Hard shower on the 23d, accompanied with thunder; the first sprinkle in thirty days.

*Fort Madison, Iowa.*—November 23.—This has been the longest drought since the State was settled by white men; wells nearly all failed. 28th, two and one-tenth inches of snow.

*Atchison, Kansas.*—November 28.—Three inches of snow. 30th, ice floating in the Missouri opposite this city to-day, being the first this season.

*Baxter Springs, Kansas.*—Snow from 11 p. m. 28th to 6 a. m. 29th; depth four inches. No rain during the month till the 24th.

*De Soto, Nebraska.*—No rain during the month, and the only snow three-tenths of an inch on the 28th.

*Glendale, Nebraska.*—Three-quarters of an inch of snow on the 28th, the only snow except a few scattering flakes on the 10th. No rain during the month. The earth has not been thoroughly wet since the 18th of July.

*Richland, Nebraska.*—No rain during the month; a quarter of an inch of snow on the 28th. This has been the warmest November during nine years observed, except November, 1865, which was followed by such general injury to fruit trees. The wood of fruit and other tender trees appears to be matured this season. Winter began on the 28th, up to which time ploughing continued.







